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Korea Health Demonstration Project

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KOREA HEALTH DEMONSTRATION PROJECT

PROJECT IMPACT EVALUATION NO. 36

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FOREWORD

In October 1979, the Administrator of the Agency for International Development initiated an Agency-wide ex-post evaluation system focusing on the impact of AID-funded projects. These impact evaluations are concentrated in particular substantive areas as determined by AID's most senior executives. The evaluations are to be performed largely by Agency personnel and result in a series of studies which, by virtue of their comparability in scope, will ensure cumulative findings of use to the Agency and the larger development community. This study of the impact of the Health Demonstration Project in Korea was conducted in July and August, 1981, as part of this effort. A final evaluation report will summarize and analyze the results of all the studies in this sector, and relate them to program, policy, and design requirements.

SUMMARY

In 1976, the Government of Korea and the U.S. Government signed a loan agreement (1) to establish the capability within the government of Korea to plan, conduct, and evaluate low-cost, integrated health delivery projects directed primarily toward low-income families and (2) to successfully demonstrate at least one multi-gun (county) low-cost integrated health delivery system that is replicable in other parts of Korea. Upon this agreement a semi-autonomous organization was created called the Korean Health Development Institute (KHDI) and given the responsibility for designing, implementing, and evaluating three primary health care projects at the local government level (gun). It proposed the introduction of a new cadre of health personnel called the Community Health Practitioner (CHP) and expansion of the professional capabilities of an existing single-purpose cadre of personnel, the Community Health Aide (CHA). Both cadres would work as a team through a village volunteer called a Village Health Aide (VHA) to increase community involvement in improving its own health. These common elements of a rural health delivery system were tested in each demonstration site in conjunction with two separate experiments to test the feasibility of alternative financing mechanisms via a community cooperative and a pre-existing local health insurance program.

This project was developed and implemented outside the existing line ministerial structure through the Korean Health Development Institute, KHDI. However, in order to obtain the necessary cooperation with the several governmental and private organizational entities with interest and jurisdiction, a National Health Council was created to coordinate the interests of these various parties to implement successfully the demonstration delivery systems in Hongcheon, Okgu, and Gunee Guns.

By 1977, these three test projects had started to provide health services in rural areas. Considerable progress had been made by 1978 to improve access to health care services and to increase the use of the new health providers working in the rural areas. The average cost per curative visit at the most peripheral health unit was $1.90. At the same time, it was found that physician market share in those areas had declined by about 40-50 percent. Shortly thereafter, the Korean Medical Association pointed out to the Ministry of Health and Social Welfare that the Village Health Aide and the Community Health Aide were providing simple curative services which were outside the scope of their legal license to practice.

During the period from 1978 to the end of 1980, several other important events occurred. As a consequence of Ministry of Health initiatives during the mid-1970s, the number of medical school graduates had doubled to the point where the military

could not absorb all of them upon graduation. A three-year alternative rural service commitment was developed and financed by the military. Second, the scope of medical practice by the CHP, the backbone of the newly devised health care system, was considerably restricted on quality of care grounds. Third, after experimenting with the health insurance program in Okgu, the government decided to launch a more comprehensive health insurance experiment throughout these three demonstration areas which was consistent with the legislatively mandated class II insurance program. One important provision of this experiment was that certain approved private physicians in each area as well as CHPs could be reimbursed for patient visits by the insurance program.

As a consequence of these changes and the continued increase of per capita incomes, the early success achieved by the demonstration area health care systems had been seriously eroded. Little community involvement activities continued. Utilization fell markedly, and the cost per curative visit at the peripheral units had increased to nearly $3.00 which implies that the system was no longer financially sustainable at current levels of support.

Developing a new institutional mechanism for designing, implementing and evaluating a potentially new national health care system is a risky endeavor. When the Ministry of Health viewed the fledgling system as potentially competitive, it supported the political efforts of physicians to circumscribe the paraprofessional's scope of medical practice. As of August 1981, the KHDI was subsumed into a newly constituted body, the Korean Institute for Population and Health (KIPH). None of the senior officials of the new institute were from KHDI and the scope of health work for the new institute was not clarified.

While access to curative medical care initially increased in the three demonstration areas, utilization rates at the KHDI developed rural facilities declined, first, due to the circumscription of paraprofessional medical practice, and then due to the increased supply of alternative service physicians, and, in July 1981, class II insurance. The new insurance program was also associated with a further upswing of physician workloads and little activity was observed at the facilities operated by CHPs. The people in rural areas were also not pleased with the thought of paying compulsory health insurance premiums which de facto raised local taxes by over 50 percent. A low premium compliance rate was observed.

PREFACE

Governments increasingly recognize that traditional Western-oriented medical systems which are dominated by physicians and oriented to the use of hospital-based care and sophisticated technology do not meet the health care needs of the majority of their populations. Many countries are exploring alternative methods to overcome this problem. Korea represents one country which has been searching for alternative mechanisms for delivering health care to rural areas.

In 1976 the Government of Korea signed a loan agreement for $5 million with the U.S. Government to establish the Korean Health Development Institute (KHDI). KHDI was given the responsibility for implementing and evaluating three "low-cost" primary health care demonstration projects at the local government gun level. It proposed to introduce a new paraprofessional cadre of personnel called the Community Health Practitioner (CHP), and improve the professional capability of an existing cadre, the Community Health Aide (CHA). Both cadres would work as a team through a village volunteer called a Village Health Aide (VHA) to increase community involvement in improving their health.

In July and August 1981, an impact evaluation team visited the three demonstration guns. The team visited five health centers and many rural health posts, and interviewed government officials, health care providers, and a number of health care consumers. The evaluation team consisted of two AID staff members--an economist and a public health specialist--a Korean health sociologist and a Korean anthropologist. This report contains collective views of the evaluation team.

The team wishes to thank the staff of the Korean Institute for Population and Health (KIPH) who took time from their busy schedules to arrange appointments, collect and translate documents, meet with the team, and contribute to the team's knowledge and understanding of the project. Special appreciation is given to Kil-Byong Yoone, Soo-Suk Yang, Yung Ha Cho, and Doug Hyun Chang of KIPH who assisted the team in the demonstration guns. We also want to specially acknowledge Dr. Sung Woo Lee of the Ministry of Health and Social Affairs for his penetrating comments and constructive criticism as we tested our conclusions. We are grateful to Dr. Ha-Cheong Yeon of the Korea Development Institute, whose book, Primary Health Care in Korea, provided valuable background information for our study. We also appreciate his insightful comments about the rural health care delivery system. His colleague, Dr. Chong Kee Park, was very helpful to the team in a similar way.

The team is also pleased to acknowledge the county chiefs who received them with great hospitality and officials of the insurance cooperative who provided invaluable help in understanding the financing of health care in rural areas. The team is especially grateful to the many health care providers working in the demonstration and control areas who took the time to speak frankly with us. In addition, the team extends its appreciation to the Korean men and women who are the recipients of health care in the rural areas. These men and women took valuable time from their farming responsibilities to speak with the team members.

Finally, the authors acknowledge the many thoughtful comments made by their colleagues on earlier drafts of this report. Especially helpful comments were obtained from Robert Berg (AID), Abby Bloom (AID), Richard Blue (AID), Dayl Donaldson (Independent Consultant), K. Celeste Gaspari (University of Vermont), Molly Hageboeck (AID), Maureen Lewis (AID), Theresa Lukas (AID), Afsaneh Meshayecki (World Bank), Jeremiah Norris (Battelle Memorial Institute), and Jack Royer (AID).

Special thanks is given to Mrs. Yun-Hi Cho who typed the evaluation report and to the U.S. Embassy and the staff of the Residual AID Affairs Office who provided logistical support.

GLOSSARY OF TERMS

AID Agency for International Development

Ban Subdivision of Ri

BCG Immunization for Tuberculosis (Bacillus Calmette-Guerin)

CD Community Development

CHA Community Health Aide

CHC Community Health Center

CHP Community Health Practitioner

CP Community Physician

EPB Economic Planning Board

Eup The administration unit which is equivalent to a myon but with more population than a myon

Gun The administrative unit between do (province) and myon or eup, equivalent to a county

HC Health Center

KIPA Korea Institute for Population and Health

KDI Korea Development Institute

KHDI Korea Health Development Institute

KIFP Korea Institute for Family Planning

Maul-Geon-Gang-Saup The Korean phrase for "community health project"

MCH Maternal and Child Health

MIS Management Information System

MHA Ministry of Home Affairs

MOHSA Ministry of Health and Social Affairs

Myon The administrative unit which consists of several ris, equivalent to a township of 10,000-15,000 people

Sub-Myon 3,000-5,000 people

NHS National Health Secretariat

PHC Primary Health Care

PHP Primary Health Post

PHU Primary Health Unit

Ri The lowest administrative unit, which consists of several villages of 500-1,000 inhabitants

ROKG Government of the Republic of Korea

Saemaul Undong New village movement

VHA Village Health Agent

VHC Village Health Communicator

Won (₩) Unit of Republic of Korea Currency (1981 U.S. $1.00=₩676)

WHO World Health Organization

PROJECT DATA SHEET

1. Country: Korea

2. Project Title: Korea Health Demonstration Project

3. AID Project Number: DCL/P 2093

4. AID Loan Number: 489-U-092

5. Mode of Implementation:

   a. Project agreement between U.S. AID and the Government of the Republic of Korea.

   b. The project was implemented by the Korea Health Development Institute.

6. Project Funding:

AID Total:	$5.0 million
Korean Contribution:	$1.667 million
Total Project Costs:	$6.667 million

7. Terms:

   This loan shall be repaid by the Borrower within forty (40) years after the date of the first disbursement. Thereunder including a grace period of not to exceed ten (10) years from the date of first disbursement. Interest rate of 2 percent per annum for 10 years after the first disbursement and at a rate of 3% per annum thereafter.

8. Terminal Date for Disbursement: December 31, 1980.

9. Purpose:

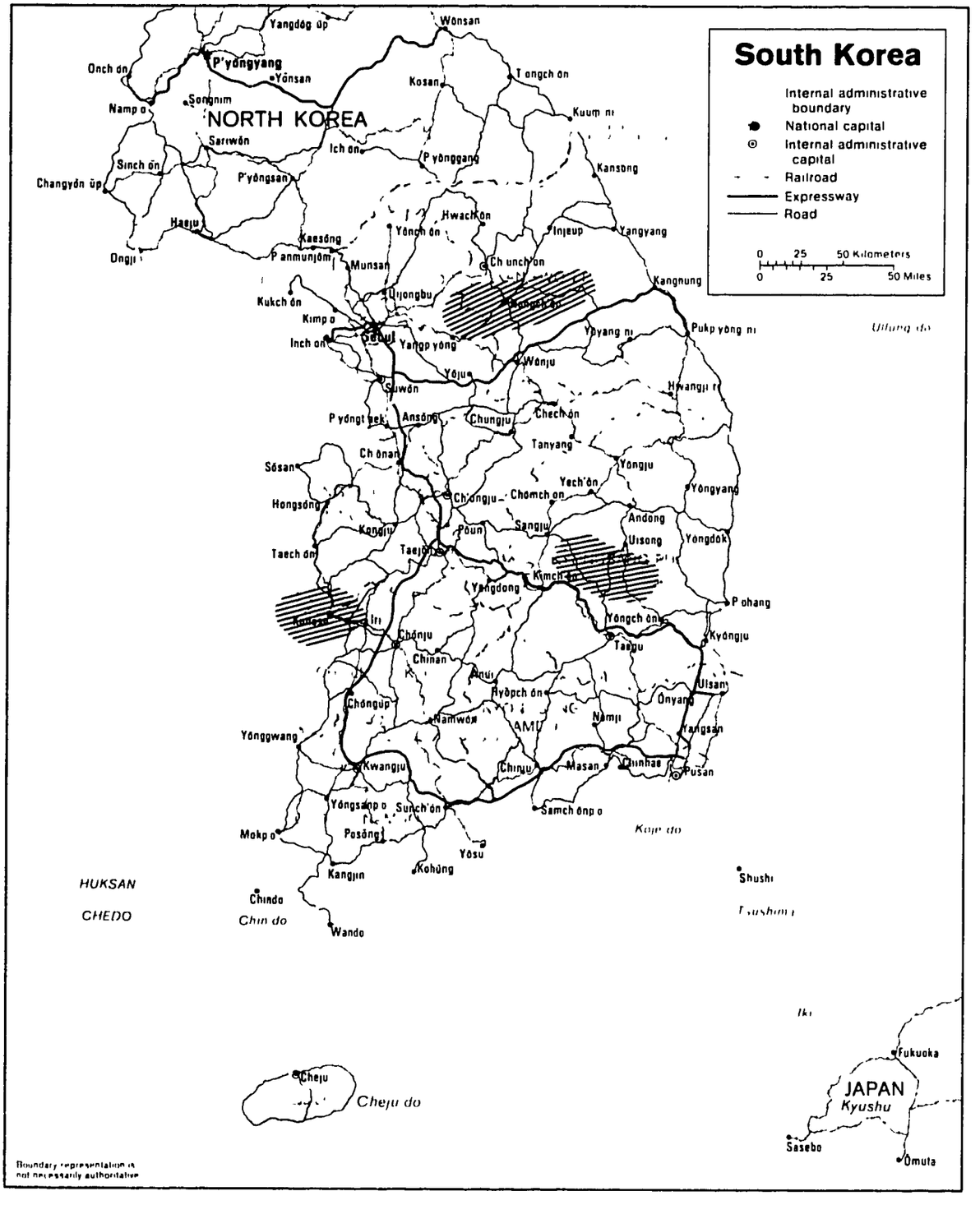
   (1) To establish the capability within the Government of Korea to plan, conduct, and evaluate low-cost, integrated health delivery projects directed primarily toward low-income families; and (2) to successfully demonstrate at least one multi-gun low-cost integrated health delivery system that is replicable in other parts of Korea.

10. Accomplishments:

    A program was developed to train, retrain, and utilize three physician extender cadres: (a) Community Health Practitioners (CHP), (b) Community Health Aides (CHA), and (c) Village Health Aides (VHA) in three integrated primary health care demonstration systems in rural Korea. ₩112,536,000 was expended to refurnish or build health facilities in the demonstration areas.

11. Evaluation:

A joint AID/Goverment of Korea mid-project evaluation was conducted in July 1978 and the end-of-project evaluation was conducted in September 1980. The Government of Korea, via the Korea Health Development Institute, also conducted its own evaluative research on the design and implementation of this health intervention throughout the life of the project.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Ansŏng
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Chech ŏn
Tanyang
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Andong
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I. PROJECT SETTING

A. Historical Background

Shortly after the bellwether political elections of 1971 in Korea, in which President Park only narrowly won because of greatly reduced political support from rural areas, a number of policy changes were enacted to redress the growing imbalance between rural and urban incomes which had widened during the rapid economic growth of over 10 percent per year during the 1960s. The Sae-maul (New Village) Movement was initiated in rural areas to improve the rural-urban income balance. Further, agricultural price policy was changed at that time with the government rice procurement price being raised significantly to improve agricultural incomes.

Other manifestations of this concern for social and human welfare include the enactment of social security and related legislation which included medical insurance for the poor. In addition, a number of surveys and studies such as the 1973 National Sickness and Injury Survey and 1973 survey of the living conditions (of poor households) conducted by MOHSA, were launched during the same period to provide further understanding of the social implications of such rapid economic change.

Finally, President Park emphasized in a statement at that time "the importance of expanding the accessibility of health care service to the poor, by stating that health care is the fourth basic necessity of life along with food, clothing, and shelter."[1/] In 1973, at a Western donor's meeting in Paris, the Government of Korea made an initial plea for resources to expand the provincial hospital system. As an alternative, the donor community suggested that the government devise ways of providing "low-cost" health services in rural areas. In 1974, AID was asked to provide the Government of Korea with the assistance necessary to (1) analyze the health delivery systems in Korea and (2) design and cost two or three field experiments to deliver health care services to the urban- and rural-based poor. If these experiments were found to improve the efficiency of delivering health care services, replication in other areas of the country could proceed.

1/ Chong Kee Park, "The Organization, Financing, and Cost of Health Care," in Chong Kee Park, ed., Human Resources and Social Development in Korea, Essays on the Korean Economy, Vol. 4, (Seoul, Korea; Korea Development Institute, 1980), pp. 97-98.

B. Health Status and Health Care Delivery

In 1973, just prior to the initiation of the health project, health status indicators in Korea were relatively favorable in comparison with those for other Asian countries. Life expectancy was 68 years, second only to that in Japan. Infant mortality was also low (38 per 1000) and dropping, and the crude birth and death rates were low and declining. Thus, population growth was falling from over 3.0 percent per year before 1960, to 2.2 percent in 1971, and 1.6 percent by 1981. Finally, in 1973 the available epidemiological data indicated that there was a disease pattern change underway which was consistent with the demographic changes being reported, e.g., more digestive and respiratory problems, accidents, cancer, and heart disease, rather than the many infective and parasitic diseases common in poor countries.

In 1973, the health care delivery system was basically a private sector, doctor oriented, solo practice, fee for service system. Approximately 85 percent of health expenditures were direct fee for service with the central and county governments providing the remainder of the costs. Pharmaceuticals could be obtained without a prescription and pharmacies were the locus of over 70 percent of initial contacts with the health care system. Traditional practitioners--midwives, herbal doctors, traditional medicine dealers, and shamans--provided numerous health care services, particularly in rural areas and for specific reasons, and many herbal medicines are used for their health maintenance properties.

Preventive health services had traditionally been provided by the local county governments, initially through county Health Centers and subsequently, through single-purpose township-based health workers who focused their individual attention on either tuberculosis control, family planning, or maternal and child health services. As of 1981 there were three such workers assigned to each myon (township) in the country. (See Appendix B, Organization of Health Care Delivery in Rural Korea, for additional information about the general situation as well as the specific details about the three demonstration sites.)

II. THE PROJECT

A. Design and Implementation

AID initiated project activity in 1974 by commissioning a number of preproject studies to address two key questions: (1) what was the appropriate low-cost health care technology to implement, and (2) how to implement the agreed-upon technology,

i.e., through what governmental mechanism(s) can such a technology be implemented, given the institutional and political characteristics of the government? These surveys, and a capstone study by Family Health Care, Inc., in June 1974 ("Steps Toward a National Health Strategy for Korea"), led to a joint determination that the Government of Korea needed to develop a national health program which would extend health services to those rural and urban citizens who were excluded from the system as a result of the pervasive maldistribution of health facilities and providers to rural areas. For example, at that time private hospital beds represented 73 percent of all hospital beds available in the nation. Half of all hospital beds were located in Seoul and Busan. In 1974, these two cities with 24 percent of the population had 46 percent of all physicians and 53 percent of all pharmacists. The government allocated a very small share of its resources to health service delivery and only 2.8 percent of GNP was so focused.

The analysis conducted in 1974 did not recommend a single "low cost" health care delivery technology. Rather, it recommended that several alternative designs be tested which had several common elements. These common elements included:

-- Providing basic preventive and therapeutic services to at least two-thirds of the target rural population

-- Training and deploying two new types of community health workers, i.e., the Community Health Practitioner (CHP) and the Village Health Aid (VHA), to provide the services defined above

-- Developing and strengthening mechanisms for community involvement within each local administrative unit

It was agreed upon that these common elements could be tested in three demonstration sites throughout the country. (See the map of Korea for the location of the sites.) In each site, other health care technology experiments were also tested. In Hongcheon, an experiment was developed to determine the feasibility of using a community cooperative to (1) assist in the financing of certain health care services and (2) reinforce the preventive work of the village health aid. In Gunee, the program was initially designed to emphasize the delivery of maternal and child health services. In Okgu there had been a history of health insurance activity. Further experimentation with its use as a possible financing mechanism was viewed with interest, since little experience was available in Korea at that time about how to solve the rural health care financing problem. Finally, Okgu was considered an important test site, since it was located close to two medium-size cities where health care services were readily available.

With respect to project implementation, a number of issues had to be addressed. First, at least three implementation ministries (the Ministry of Health and Social Affairs, the Ministry of Education, and the Ministry of Home Affairs) had partial jurisdiction over various components of the design activity. Second, the Economic Planning Board, through which all AID projects were channelled to the various implementation ministries, had made a commitment to the Ministry of Health and Social Affairs to ensure their control over the implementation of this activity.

The AID project designers were wary of housing this project in the Health Ministry for several reasons. In particular, they were concerned that other Ministry priorities, such as the expansion of the supply of physicians via new medical schools and enlarging class size in all existing schools, would be inconsistent with the envisioned PHC activity or that it would receive a low priority and perhaps actually be subverted. In addition, several medical schools had already implemented "PHC" programs in rural areas primarily to provide educational experience for their medical students and sites for epidemiological research rather than experimenting with providing services via alternative delivery personnel.[2/] Finally, the design team was aware of the generally low status of the Ministry and its basic inability to develop and implement a quasi-social experiment and conduct unbiased monitoring and operational research on its progress. At that time many on the design team were aware of how an earlier health planning project awarded to Westinghouse had been coopted by the Ministry and, as a consequence, never became truly functional.

The design team also was aware that the Ministry of Home Affairs, which is the primary source of revenue for local government activities, did not have the technical capability to design and implement such initiatives, even though it would be involved in future funding decisions to sustain these programs, assuming that some governmental support was required.

Finally, the design team found that the Economic Planning Board had earlier established an external quasi-government research institute for the purpose of improving the economic planning and analytical capabilities of the government. This organization, the Korean Development Institute (KDI), was legally constituted and given a broad research and analytical mandate, with its work being directed at senior government policymakers in the area of economics and development. The design team quickly

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[2/] In 1973, there were at least three such programs, one in the south, one northwest of Seoul and one in the area surrounding Chungcheon in the northeast.

found this analogy appealing as the way to obtain implementation flexibility, research independence, and high-level visibility for primary health care activities. The project design envisioned that a senior level coordinating board was necessary to elicit cooperation from the various national ministries which had some implementation jurisdiction, for example, Health and Social Welfare, Home Affairs, and Education, and the participation of local governments (counties or guns), medical schools, and the Economic Planning Board. Thus, a National Health Council was established to perform this coordination function. The analytical capabilities of the KDI was also viewed as essential to maintaining independence of the evaluation and research activities and guaranteeing the quality of its work. It was not feasible to develop a separate health group within KDI, so the team proposed the creation of an independent but "sister" type of institution through which the experimental projects could be implemented and evaluated, with the necessary cooperation and assistance of all interested parties represented on the National Health Council. This implementation organization became the Korea Health Development Institute (KHDI).

By September 1976, the three demonstration sites had been chosen after a thorough review and discussion of their characteristics in comparison with 13 other sites. In early 1977, KHDI had formulated the provincial- and gun-level rules and regulations for the demonstration Community Health Projects (Maul-Geon-Gang-Saup) and had begun to develop the two common elements of the envisioned health programs in the three areas, i.e., the training and use of two paraprofessional manpower cadres and the development and support of local community involvement in the health project. It was envisioned that these local committees established at the myon or subcounty level would (a) define health problems, (b) provide guidance about how to resolve these problems with their own or outside resources, and (c) speak with higher level government officials about ways to solve the identified problems.

B. Intervening Variables and the Policy Context

Before, during, and subsequent to the project design and implementation in 1977, a number of political, economic, and policy changes occurred which have affected the long-run impact of the demonstration project. In the impact section of the paper, the relative importance of each of these factors is assessed. The purpose of this present discussion is to provide a more complete description of the project context, particularly with respect to policy changes affecting the development of health care delivery in rural areas of Korea.

First, in 1971, the legislature enacted a medical assistance program (called medicaid) for the poor and other low income persons. By 1981, this program had expanded greatly. In one demonstration county, Gunee, medicaid beneficiaries comprised over 50 percent of total patients seen at project clinics.

Second, in 1977, the government began implementing the 1976 amended Medical Insurance Law of 1963. The revised law of 1976 established a two-part medical insurance program. The first part (class I) was for workers (and their dependents) of large employers (defined in 1981 as having 100 or more workers). The second part (class II) was originally designed as a voluntary community-based insurance plan for the self-employed, e.g., farmers, and other small employers. The class I insurance program was made compulsory from the outset and was administered by health insurance associations. Class II on the other hand has just been made compulsory as of July 1, 1981 and is administered by the local county governments. (See Appendix C for more details.) The impact of compulsory class II health insurance in the rural areas is discussed at length in Section C-3 of this report. Its design is in part based on the experience gained in the demonstration areas of Okgu and Hongcheon.

Third, after having enacted the legislation to establish the paraprofessional personnel cadres necessary to implement the community health demonstration project, the government in 1979, under pressure from the Korean Medical Association began to restrict the scope of curative medical practice of the paraprofessional personnel. In that year, the CHAs and VHWs were restricted after the Korean Medical Association (KMA) informed the government that these personnel cadres were providing basic curative medical care service--dispensing simple drugs such as aspirin, and, in the case of CHAs, giving immunization injections--in violation of the medical practice laws of Korea. In summer 1980, following a final AID program evaluation recommendation, the CHP's practice was restricted. They could not use certain antibiotics, the available formulary was cut, and they could not provide injections without a physician's direct supervision.

Fourth, in 1979, the Ministry of Defense permitted medical school graduates to sign up for "alternative service" for three years in "underserved" rural areas instead of being inducted into the military. However, the supply of physicians to rural areas, including the demonstration counties, increased only in early 1981. The Ministry of Defense policy was introduced primarily because the number of medical schools and medical school class size have increased very rapidly in recent years from 1,400 graduates per year in 1974 to over 2,500 graduates per year in 1981, which is more than the military could effectively use.

It is also important to point out that those physicians who opt for alternative service have about 85 percent of their wages covered by the military during that period. Further, during their period of service their wages are about 67 percent as much as an average paid CHP whose salary is paid fully from the health budget of the county government.

Fifth, throughout Korea, local and central government taxes have increased dramatically since 1976, though not as a proportion of GNP. Local taxes on a per-household basis in the three demonstration counties has increased by about 25 percent in real terms from 1976 to 1978 and has increased further since then. The central government announced on July 27, 1981, the introduction of an education tax comprised of a series of surtaxes on real estate sales, cigarettes, liquor, and interest and dividend and dividend income.[3/] As of July 1, 1981, the county governments must collect "compulsory" class II health insurance premiums from rural households, which, if collected, will more than double present annual average household tax payments.

The tax increases including the health insurance premium proposal must be placed in the larger economic context. Because of the international recession of 1979-1980, poor weather which reduced rice production, and overexpansion of government investment in heavy industry and other government expansionistic economic policies, the Korean economy in 1980 suffered its first recession since the 1950s. The nearly 6 percent drop in real GNP in 1980 from the previous year was a significant psychological shock to many Koreans, particularly after nearly 20 years of unprecedented economic expansion. This income drop was felt particularly by rice farmers whose incomes fell the most even after support prices rose to partially dampen the impact of poor yields. The general rate of inflation also increased in 1980 in large part due to government deficit financing on the agricultural support program.

Sixth, in late 1979, President Park was assassinated. A new president, President Chun Doo Hwan has consolidated power and reenforced the late president's pledge to health, welfare, and social progress. He has emphasized health care delivery, nutrition, and education as priority program areas. How the country addresses its economic recovery from the 1980 recession will determine how forcefully the present government can address its social priorities, including health. However, as mentioned above, it has begun to implement class II health insurance. In addition, as of September 1, 1981, it announced a major policy affecting the delivery of medical care services. Since that

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3/ The Korea Herald, July 30, 1981, p. 4.

date, only pharmacists can fill prescriptions written by physicians and physicians can only prescribe, not fill prescriptions. Nearly 70 percent of all initial health provider contacts are with pharmacists, who make de facto medical diagnoses. To successfully implement this policy change, a considerable reordering of consumer and provider patterns of health careseeking behavior is implied.

C. Project Summary

In September 1975, after approximately one and one-half years of design work, the Government of Korea and the United States signed a loan agreement for $5 million to (1) establish the capability within the Government of Korea to plan, conduct, and evaluate low-cost integrated health delivery projects directed primarily toward low-income families and (2) successfully demonstrate at least one multi-gun low-cost integrated health delivery system that is replicable in other parts of Korea. KHDI, a semi-autonomous organization, patterned in part after the Korean Development Institute (KDI), was established to design and implement a health care delivery system capable of extending service more broadly throughout the population by using paraprofessional personnel and more actively engaging the community in the design and implementation of the endeavor. In order to obtain the necessary cooperation from the many private and governmental organizations with some jurisdiction in the implementation of this activity, a senior level coordination board, called the National Health Council, was established. Further, a small professional staff of two or three persons seconded from other organizations, was pulled together into a National Health Secretariat to conduct macro-planning and evaluation of the project.

KHDI obtained the necessary agreements from three counties,--Hongcheon, Okgu, and Gunee--to establish the envisioned programs. The institute developed a curriculum and trained community health practitioners (CHPs) and Village Health Workers (VHWs), and upgraded the training of the Community Health Aides (CHAs). They placed them in the various guns and provided them with support systems, including drugs and supplied logistics and supervision. They fostered the establishment of local community health committees as the primary vehicle for increasing community participation/involvement in decisionmaking and increasing use patterns. They experimented with two ways to help finance the health care delivery system via a preexisting rural cooperative program in Hongcheon, and via a private health insurance program in existence in Okgu. They also made a special effort to strengthen the MCH program in Gunee.

About eight months after the project's termination in December 1980, a four-person impact evaluation team analyzed the project's impact, in light of the intervening policy variables

and larger context, with respect to its two objectives of (1) institution building for the purpose of establishing a government capability to plan, conduct, and evaluate low-cost integrated health care delivery projects, and (2) demonstrating the successful implementation of at least one multiyear, low-cost, integrated health delivery system, potentially replicable to other low-income areas in the country. The analysis of this impact evaluation is presented in Section III.

III. PROJECT IMPACT

A. Institution Building

The Korean Health Development Institute was established by law as a semi-autonomous institute under the Ministry of Health and Social Affairs. KHDI's functions included:

- -- Health policy analysis, planning, and research for the government
- -- Support for the implementation of a national health care system, particularly through strengthening managerial skills
- -- Curriculum development and teacher training for health worker training programs

In order to carry out its mandate, KHDI recruited a staff of 30 health professionals. The KHDI staff successfully designed baseline data surveys and an evaluation plan against which to evaluate the project. In addition, it has conducted operational research on access, utilization, and consumer satisfaction. Much of this research has been conducted on the basis of a management information system developed and implemented for managerial and program evaluation purposes. The system is designed to continuously obtain a limited set of predetermined key data elements in order to measure health system performance, particularly with respect to infant health care, maternal care, family planning, and tuberculosis control.

KHDI was able to obtain the cooperation of three counties to establish the demonstration health care delivery systems utilizing paraprofessional providers and involving the community in health decisions. However, the overall organization of the health care system remains unchanged. The semi-autonomous nature of KHDI created problems of authority and responsibility. Health Center Directors and gun chiefs believed themselves to be responsible for health programs while KHDI was charged with implementing the new system. Local government personnel classifications and regulations made it impossible for KHDI to hire qualified health educators and sanitarians who had the necessary training and experience to develop and implement community health

education and environmental programs. Conflict within the system as to spheres of authority created delays in implementation and reluctance to accept the KHDI mode.

KHDI was more successful in its manpower training activities. It developed training curriculae for CHPs, CHAs, and VHWs, including retraining and refresher courses. The government (the Ministry) has asked KHDI to train medical school staff who would be responsible for CHP training in the future. The CHA retraining program designed to upgrade them to multipurpose workers has been institutionalized into the initial CHA training program and all currently employed CHAs are receiving a two-week retraining course. The government also intends to use the embodied training expertise to provide technical assistance for MCH worker training programs.

However, in 1979, the Korea Medical Association protested that CHAs were operating in violation of Korean medical laws by providing curative care. As a consequence, these functions were taken away from them. All CHAs interviewed expressed regret that they could no longer provide basic first-aid to villages.

The 1979 protest by the Korean Medical Association also affected the Village Health Worker (VHW) cadre. Prior to 1979, in addition to her preventive and promotive activities,the VHW dispensed simple drugs for colds, headache, mild diarrhea, and provided simple first aid care. Most villagers interviewed in Hongcheon believed that since the VHW no longer provided drugs, she no longer had a function to perform. The villagers in Gunee were unaware of their VHW. One VHW interviewed said she was still active, but had received no refresher training since 1979. The VHWs in Okgu are still active and provide a continuing link between the people and the health center. All VHWs interviewed felt the need for training in health education. Currently no VHW training is taking place in any of the guns.

The government has also circumscribed the role of the CHP by enacting the law on "Special Measures for Health Services in Rural Areas" in January 1981 which limits the training of CHPs to 24 weeks and sharply curtails their curative role. The government also has not inducted this cadre into the civil service. At the same time, it has expanded the training programs for CHPs with a goal of training 2,000 additional CHPs between 1981 and 1984. These actions are clearly inconsistent and reflect the internal political situation within the community of health providers.

The KHDI experiment with voluntary health insurance for rural health services demonstrated that it was not feasible to finance rural health care on this basis. (See pp. 28-32 and Appendix C for details.) As of July 1, 1981 the government has initiated a compulsory class II health insurance scheme in the

same demonstration areas. Initial examination of this program has led the team to believe that this compulsory insurance scheme, as it is being implemented, will be equally unsuccessful.

KHDI was never able to hire full-time professional planners or economists to conduct national evaluations or operational research. It was only able to obtain, via the National Health Secretariat mechanism, the services of one KDI economist to conduct the excellent evaluation study, Primary Health Care in Korea: An Approach to Evaluation. Thus, the KHDI institution, while gathering substantial management and program evaluation data from the project sites, never had the manpower necessary to impact on government planning for health. It is significant to note that this deficiency is recognized by several influential governmental officials, but to date the problem has not been addressed by the new organization, the Korean Institute for Population and Health (KIPH).

On July 1, 1981 KHDI and the Korean Institute for Family Planning (KIFP) officially became one organization, the Korean Institute for Population and Health (KIPH). Twenty-nine of the original KHDI staff remain in the new institute. The original KHDI staff believes that this group will have a research and evaluation function for the class II insurance program in the demonstration areas. However, no official request has yet come from the Mnistry of Health and Social Welfare. The role the remaining KHDI staff will play within the new organization is as yet undecided. The recent appointment of Dr. Sung Woo Lee, former Senior Researcher for KHDI, as Director General, Health Affairs Division of the Ministry of Health and Social Welfare, is encouraging, since his division has responsibility for developing a national network of health services. However, the failure to appoint any former KIPH staff to a directorship of any KHDI division raises speculation about the future role KHDI will play in health policymaking.

B. Changes in the Rural Health Care Delivery System

The unequal distribution of Western-oriented medical facilities and providers, coupled with the high cost of medical care to rural populations, led to the development of the Korean Health Development project. In order to accomplish the second goal of the project, to successfully demonstrate a multi-gun low-cost delivery system that is replicable in other parts of Korea, a number of changes were introduced into the three demonstration health care delivery systems. The changes introduced by the project affected three distinct groups: providers, consumers, and the Government of Korea.

1. Providers

The KHDI model called for training a new type of health provider, the physician extender called a Community Health Practitioner (CHP). Nurses (who are typically women) were given a year's extra training in the provision of curative services to people who lived in rural areas. This model also provided for retraining existing single-purpose government health workers to become multipurpose health workers whose main responsibilities lay in the area of preventive and health promotive care. Physicians were sensitized to the need for this intermediate deliverer of health care and trained to supervise the CHP and to accept and treat referrals.

By establishing these new workers in the rural areas of the demonstration counties, total utilization of health care providers rose. However, in these rural areas, the physicians' market share had declined by 5 percent after two years of program operation. During the same period, CHPs acquired nearly 10 percent of the market. This new competition also had contributed to a slight decline in private physician fees in the demonstration areas, whereas in nonaffected rural areas, the physician fees rose by 30 percent. During this initial project period, 1976-1979, the consumer had the option of receiving basic curative care from CHPs for about 25 percent the fee charged by a physician. It is not surprising that private physicians would strongly protest the impact of this new provider and successfully lobby to have the role of the CHP curtailed (see Appendix G for "Law on Medical Services to Rural Areas"). In addition, private physicians lobbied strongly for equal coverage with the CHPs under class II health insurance; thus, the price differential to the consumer at the point of consumption between physicians and CHPs was removed.

This set of reactions by physicians to the introduction of CHPs changed utilization patterns by the summer of 1981. Between 1973 and 1980 utilization had dropped by nearly 50 percent at health units operated by CHPs after their scope of medical practice had been curtailed. In addition, after the initiation of the class II health insurance on July 1, 1981, CHP utilization had declined even more from 10-15 patient visits per day to about 5-6. On the other hand, private physician use increased significantly from about 30 patient visits per day to nearly 40 per day.

Other changes have occurred among providers with the introduction of CHPs. Since nearly all nurses in Korea are women, the CHP cadre developed via this project were also women. They were introduced into these demonstration areas as curative medical care providers with the implicit support of villagers and the myon chief for their role as the local health center director. As might be expected, several physicians interviewed did not see the need for CHPs, but all agreed that CHPs knew the limits of

their training, referred patients when necessary, and that they had never seen a patient who had received improper care from a CHP.

All of the CHPs interviewed had become CHPs because they wanted the opportunity to provide more care to patients and were dissatisfied working directly under a physician. However, in 1974 the Government of Korea began using all medical school graduates that could not be absorbed into the military as public health doctors in the rural areas (with service and pay identical to that of doctors in the military--three years and ₩100,000 per month); this policy resulted in other changes. In Gunee and Hongcheon, no funds were available to build new clinics, so all of the doctors are being placed with CHPs. As this placement has occurred, the CHPs have seen a role reversal to the old doctor-nurse relationship. Consequently, they are not using many of the skills for which they have been trained. Presently the physician is providing the curative care and the CHP the preventive care. Where physicians have been deployed to work with CHPs, they have also taken over the role of local health center director. In sum, the status of the CHP has declined significantly, and this has reduced effectiveness as well.

Finally, the national government has not recognized the CHP as a permanent civil service employment category. Thus, at present, CHPs are hired on a year-to-year contract and do not obtain salary increments on an annual basis. KHDI also initially decided that in order to obtain a sufficient number of nurses for CHP training, it was necessary to increase their pay significantly. As of 1981, they earned around ₩275,000 per month, which represents an additional problem for the county government since a salary of that level is as high as that of the Deputy County Chief and more than 2.5 times as high as that of alternative service doctors.

Other primary health care providers were established by the demonstration project. Even though the government circumscribed the activities of the CHA in 1979 after a Korean Medical Association protest, it recognized the value of the multipurpose outreach health worker and has begun a multipurpose two-week training course to upgrade their single-purpose workers. In addition, during fall 1981, CHAs took exams to become permanent civil service employees.

The CHP and VHW cadres have been handled differently. CHPs role was circumscribed in 1981 and their training was cut back to about one-half year. Further, the government has not inducted them into the civil service even though they have expanded the numbers being trained to over 500 per year. The VHW cadre has been phased out altogether.

Finally, in Gunee where there had been a special focus on MCA services, all 23 of the midwives hired during the three year life-of-project have left. Reasons given for leaving were a sense of isolation, marriage, or no interest in working with new medical school graduates. These health posts have become health subcenters and are staffed with a mixture of senior and newly trained CHPs.

2. Consumers

Virtually all villagers agree that since 1976, health has improved in rural areas. Villagers in the demonstration projects and the control areas attribute this improvement to increased incomes, better nutrition, television campaigns designed to change people's behavior, and immunization of children. Providers and government officials generally agree, but add two other factors: the introduction of simplified water systems which began in 1977, and improved roads which allow patients to reach medical care by bus. (See Appendix Table E-6 for further details.) Villagers trust and accept the CHP and go to her for their minor illnesses. They generally see her as an acceptable source of care for minor illnesses and accidents, child care, and family planning. There is some misunderstanding as to why her ability to give injections and some medications has been curtailed. The majority of women still prefer to give birth at home, but conversations with CHPs, CHAs, and VHWs revealed that women, who used the home delivery kit provided by them delivered their children in more hygienic fashion.

All of the villagers contacted believed that the class II insurance program was too expensive and wondered how they would pay the premiums. In Hongcheon and Okgu, the average family size is six, while in Gunee, it is eight. Minimum monthly payment for a family of six in Hongcheon and Okgu is ₩2,400. On several occasions, villagers expressed the belief that if you paid the insurance premium you needed to get sick in order to get value from your money. Villagers in the Hongcheon area who had belonged to the cooperative constantly made comparisons with the benefits they received under the old program in which they paid ₩1,500 per person for three years and enjoyed the benefits for which they now must pay ₩14,000 per person over a three-year period.

The lack of understanding by the villagers as to how the class II insurance program would work points out that little had been done on the local level to prepare villagers for the scheme. Several villagers feel that if they did not use the card, they did not have to pay; others who had heard about the scheme did not find out they were members or what their level of assessment was until they received the tax form in the mail. In Okgu Gun, only the limited doctors (those who are elderly and/or who

migrated from North Korea after the hostilities ended in 1953) are allowed to participate in the scheme, and all consumers know these physicians are not fully qualified and thus express dissatisfaction that they must use these providers of care. Villagers also expressed the belief that if the limited doctor is only reimbursed for up to ₩1,200, the quality of care received will be less than the quality of care received from a licensed general practitioner.

3. Government Intervention

The Government of Korea has intervened in the delivery of health services in rural and poor areas in two principal ways since the initiation of the AID-supported health project. First, it introduced new health providers into the system (CHPs) and then added alternative service physicians who have just graduated from medical school. Second, on July 1, 1981, in an attempt to sustain the KHDI experiment in the demonstration areas, the government started a large-scale compulsory rural health insurance program experiment via the class II health insurance mechanism which was already a legal reality.

In the case of the first intervention, using nonphysician personnel to provide curative and preventive health services, as soon as the local private physicians were economically threatened by the new personnel cadre, they used their political muscle to change the legal scope of practice of such providers. CHPs were unhappy about their change in status and this has contributed to a 35 percent turnover in the number of CHPs trained over the life of the project. Further, since the CHP scope of practice has changed, it is unclear how they are to function differently than the CHA, who costs the government one-third of what is paid to a CHP. In addition, given the large number of physicians graduating from medical school who are now being made available to rural areas at 40 percent of the cost of a CHP with a military commitment to stay for at least three years and with the military paying 85 percent of their salary, the rationality of the CHP cadre is cloudy. However, the Ministry of Health has launched a plan to train 2,000 additional CHPs by 1984 in a six-month program run by several medical schools with technical assistance being provided by the newly instituted Korean Institute for Population and Health (see above for the details of KIPH); 400 were in training in 1981. What these CHPs will do is still unclear. The training cost per CHP is estimated to be about $1,200.

The compulsory class II health insurance program enacted on July 1, 1981 operates as follows. Membership premium is by

individual household member, based on taxes paid by the household in the county government in 1980.[4/] Households were assessed ₩400, ₩600, and ₩800 per person per month. The majority of the households were taxed at the ₩600 level with 10 percent at either end of the income distribution paying either ₩400 or ₩800. The Government of Korea will contribute ₩110 per person to cover the administrative costs. Under this system, patients pay ₩360 per patient visit copayment to the physician. The fees collected by the program will be used to pay the remainder of the cost of the visit. CHP visits are no longer free. Theoretically, the insurance program only covers visits to the physician and visits to the provincial hospital if the patient has been referred by a CHP or physician respectively. Licensed pharmacists, midwives, and graduate licensed herb doctors are not covered under the scheme. Furthermore, physicians are reimbursed at different levels. Limited doctors are only reimbursed up to ₩840 for service provided, making the total cost of a visit to a limited doctor ₩1,200. Licensed general practitioners in rural areas are reimbursed up to ₩2,640 while general practitioners in the city are reimbursed at the rate established by the physician minus the ₩360 per patient as copayment.

Conversations with limited doctors in all three demonstration areas revealed that they were worried about being driven from business since the reimbursement plan does not cover their cost. Most limited doctors are currently charging ₩1,500-2,000 per patient visit including medicine. As explained above, the insurance scheme will drastically cut into their income. Younger limited doctors feel they would be forced to move. While all CHPs reported a slowing down of visits, both general practitioners and limited doctors reported a dramatic increase in patient visits in the two weeks the insurance scheme had been operating. All doctors with whom the team visited believed patients would come for minor illnesses such as colds or slight digestive problems, which initially do not require a doctor's care. The class II insurance system does not cover visits to the licensed herbal doctor or to the licensed pharmacist. The Korean Association of Licensed Herbal Doctors wants to participate in the class II insurance program, but thus far problems exist in standardization of treatment and quality control of herbs.

As a part of the class II insurance scheme, patients will now pay ₩180 to visit the clinic staffed by the CHP. CHPs express concern that patients know they provide a limited amount of care and prescribe a limited number of drugs, and must refer cases to physicians. One CHP reported that in the first two weeks of the insurance program six patients she believed she had satisfactorily treated up to two weeks ago returned with a request to be referred to a physician.

[4/] Average per capita income in 1980 was $1,390.

Given the existing Korean preference for a physician's care and the payment system designed under the insurance scheme, Korean rural inhabitants may be expected to visit the general practitioner except in emergency cases where the visit would be to the closest provider. If the class II system established in the demonstration areas continues in its present form, the mix of providers in the rural areas will undoubtedly change. Limited area doctors and rural pharmacists will seek other areas of opportunity in which to earn a living. Herbal doctors will disappear altogether and utilization of CHPs will drop.

C. Health System Sustainability

This section analyzes in more depth the extent to which the project attained its second objective of successfully demonstrating "...a multi-gun low cost integrated health delivery system that is replicable in other parts of Korea."[5] The three demonstration projects must first stand the test of sustainability before the tested model(s) can be replicable throughout the country. Even if one long-run goal of the project is health status improvement, the project must be sustained in order to attain that goal. Thus, the impact evaluation has analyzed this project with respect to various attributes of sustainability. This analysis focuses on four attributes of sustainability: (1) access, (2) utilization patterns, (3) the extent to which the system is "low-cost,"[6] and (4) financing plans for sustaining the system and covering the costs.

1. Access

Time. The project was designed to provide access to promotive, preventive, and curative health services. Changes in three attributes of access between 1976 and 1979 are analyzed in the subsequent discussion. One indicator of access is time required to obtain care. Mean travel time required to obtain the services of various health providers in each demonstration area changed from 1976 to 1979 (see Appendix D, Table D-2.1).

In the three demonstration areas, mean travel time for primary care declined from 62 minutes in 1976 to about 25 minutes in 1979 after the introduction of CHPs. In the control areas where CHPs were not introduced, physician care remained over one hour

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5/ Project Paper, p. 1.

6/ Low cost in terms of being "affordable by the government" such that the system can be replicable to target populations throughout the country.

away. Other changes in mean travel time in the various control and demonstration areas between 1976 and 1979 were due to minor changes in the supply of other providers and improvement in rural road systems which enabled people to use the relatively inexpensive bus system to reduce travel time in rural areas.[7/]

Perhaps as important as actual reductions in travel time, however, for determining improvements in spacial access is to elicit consumer preferences about where they would go for medical care for health problems perceived to be either minor or serious. In one rural community in Hongcheon Gun, about 60 kms from Hongcheon town, villagers were queried about their preferred source of care for minor and serious health problems. For minor problems, they would walk about 30 minutes to the nearest pharmacist on the main road to Hongcheon. For more serious cases, virtually all villagers opted to pay ₩3,800 for the two-hour bus ride to a private physician in Hongcheon rather than walk two hours to the nearest CHP (about 8 kms). In another village in Gunee Gun, about 15 to 20 kms from Gunee town and less than 2 kms from the nearest rural clinic established by the project and operated by an "alternative service" doctor, people responded that they would go by bus to the general practitioner in Gunee town rather than go to the nearby facility.

Price. A second access indicator is the price paid for the various health services. Changes in mean expenditures paid for curative care received in 1976 and 1979 (see Appendix D, Table D-2.2) show how accessibility according to this attribute has been affected.

First, in control areas where CHPs were not introduced, the percentage increase in the mean expenditure per physician visit and druggist treatment between 1976 and 1979 was greater than in areas where the new system was introduced. Physician fees actually declined over that period in the three demonstration guns. The relatively moderate increase in physician fees in the control area is also due in part to the introduction of a fixed fee per visit reimbursement from the medicaid program that was introduced in 1977.

The decline in physician fees in the demonstration areas between 1976 and 1979 is due to several reasons besides the introduction of competitive forces which reduced their market share by 30-40 percent over the period. First, in all demonstration areas a certain proportion of the physicians were authorized to provide services to KHDI service system patients. These "public doctors" were paid on a fixed fee and basic salary basis

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[7/] Between 1976 and 1979 the proportion of paved roads in the country has increased by about 33 percent.

which did not increase rapidly over the project period. Second, physician prices tended to fall most in Okgu where the insurance program established a fixed reimbursement schedule to the authorized physicians and where the authorized physicians took the largest share of the market away from the private physicians. Third, since the CHP charged the highest fee (an average of about ₩800 per visit in Okgu), private physicians would be expected to react in a more price competitive mode to reduce the relative price differential.

Other Attributes of Access. The survey research conducted in 1976 and 1979 among the populations in the demonstration areas reveals several other insights about access change. One question which was asked of nonprescription medicine users during a 15-day recall period in both 1976 and 1979 was why had they not sought curative care advice from either a physician or a CHP. (See Appendix D, Table D-2.3 for more detail.) It is significant that the reasons stated for not seeking care from physicians or CHPs were basically economic. Between 1976 and 1979, there was an increase of more than threefold (from 8 percent to 27 percent) in the proportion of the population who stated that one reason for not seeking professional care was an increase in the cost of time. This increase, in large part, is due to the fact that rural incomes had risen by more than 35 percent during this period. Second, the proportion responding that either the high price of service or their low income was the primary reason for their decision not to seek professional care declined markedly from over 50 percent in 1976 to 15 percent in 1979. The most significant drop occurred in Okgu Gun (from 56 percent to 14 percent) where the health insurance program was fully operating by 1979. It is important to note that some of the changes reported between 1976 and 1979, in part, are due to the timing of the survey in each year. In 1976, the survey was conducted primarily during the winter--a period when the demand for agricultural labor is low--whereas the 1979 survey was conducted during the summer and fall harvest time when the demand for labor in agricultural areas is the greatest.

2. Utilization

Trends. Between 1976 and 1979, the mean number of visits per person per year for three demonstration health systems increased from 0.93 to 1.73 (an 86 percent increase). In the control areas, the increase was smaller, from 0.30 to 0.44 (a 47 percent increase). (See Appendix D, Table D-3.1 for details.) However, aggregate statistics hide a more interesting county-specific story. While Okgu and Hongcheon recorded over 100 percent increases during the 1976-1979 period, the recorded increase was only 26 percent in Gunee and 47 percent in the control areas.

Two factors largely account for this differential rate of increase across the three demonstration areas and the control area. First, while the supply of physicians has generally increased in the country as a whole and remained stable in the control areas and in two of the three demonstration areas, the number of physicians in Gunee dropped from six to three over the 1976-1979 period, and for a part of 1979, fell to one. Thus, the CHPs in Gunee tended to have more visits per capita than in other demonstration areas.

Second, Okgu is immediately adjacent to two medium large and rapidly growing cities, Gunsan (175,000 population in 1981) and Iri (100,000 population in 1981). The pilot health insurance program[8/] which began operating there in 1978 not only reimbursed Okgu-based physicians, but also an authorized set of physicians residing in Gunsan and Iri as well. Thus, by improving financial access to health care for some residents of Okgu, an expected increased utilization was realized.

While the 1976 to 1979 comparative utilization data suggest an increased utilization in the health project demonstration areas, additional comparative utilization information from a selected sample of the facilities established by this program for 1978 and 1980 shows a significant decline in use in 1980. (See Appendix D, Table D-3.2 for details.) In virtually all facilities, with the exception of a few in Okgu where the health insurance program had been established, there was a significant decline in the number of daily curative and preventive visits between 1978 and 1980. Hongcheon Gun facilities reported the largest declines which are due in part to (1) lack of project supervision from the health center director as a result of staff turnover and recruitment difficulties in 1980, and (2) the larger number of physicians operating in that county. The importance of this latter factor is discussed below.

Why did utilization decline in 1980? Data in Table 1 provide an insight into possible explanations and point to reasons underlining health care delivery policy shifts, particularly with respect to paraprofessional scope of practice. In Table 1, provider-specific market shares are presented for 1976 and 1979. In all the demonstration areas, as a result of introducing new service providers, the curative medical treatment market share declined for both private physicians and licensed pharmacists, with traditional practitioners generally unaffected by the new service system. It is clear that private physicians viewed a 30-40 percent reduction in market share with some concern. Recall that CHA's scope of practice was restricted shortly after 1979

8/ The Okgu insurance pilot project is described in Appendix C. Its impact is discussed below.

Table 1. Percentage of Treatment Received by Source (Provider-Specific Market Share) During a 15-day Period, 1976 and 1979

Area/Year	Providers						
	Private Physician [1]	KHDI Physicians [2]	CHP	Pharmacist Druggist	Herbal Medicine	Other [3]	Total (N) [4]
Hongcheon							
1979	9.2	2.8	8.0	69.8	4.8	4.9	100(871)
1976	13.2	-	-	79.5	4.9	2.4	100(740)
Change	-3.5	2.8	8.0	-9.7	-0.1	2.5	-
Okgu							
1979	9.8	5.6	5.8	68.6	7.2	3.0	100(711)
1976	13.7	-	-	70.8	8.2	7.3	100(648)
Change	-3.9	5.6	5.8	-2.2	-1.0	-4.3	-
Gunee							
1979	6.5	3.1	14.1	66.9	4.5	4.9	100(608)
1976	13.5	-	-	76.3	5.9	4.3	100(459)
Change	-7.0	3.1	14.1	-9.4	-1.4	0.6	-
Demonstration Totals							
1979	8.9	3.8	8.9	68.6	5.5	4.3	100(2,190)
1976	13.5	-	-	75.6	6.3	4.6	100(1,847)
Change	-4.6	3.8	8.9	-7.0	-0.8	-0.3	-
Control							
1979	12.9	-	-	75.1	4.9	7.1	100(406)
1976	9.4	-	-	74.7	6.7	9.2	100(372)
Change	3.5	-	-	0.4	-1.8	-2.1	-

[1] Includes private physicians.

[2] Estimated from data presented in Table 4,1, Eung-Suk Song, and Kun-Yong Song Kim, "A Summary of Final Internal Evaluation on the KHDI Health Project: Evaluating Changes in Access to Health Care," p.11.

[3] Other=folk medicines, shamanists, and quacks who include army veterans who were medics.

[4] N=number of sample (treatments received during a 15-day period of November-December in 1976 and 1979).

Source: Table adapted from Kun-Yong Song, and Eung-Suk Kim, "A Summary of Final Internal Evaluation on the KHDI Health Project: Evaluating Changes in Access to Health Care," Paper presented to the Joint ROKG/AID Final Evaluation Meeting, September 17-20, 1980, Kyongju, Korea, (Seoul, Korea: Korea Health Development Institute, 1980) mimeo, p. 13.

and that CHPs were restricted by legislation enacted in December 1980. (Appendix G provides a copy of this legislation.) Given the above reactions by private physicians and their subsequent efforts to regain their previous market share by gaining coverage under class II health insurance to reduce price differentials to consumers, it is not surprising to find a changing utilization pattern at project facilities between 1978 and 1980.

Effect of Insurance Coverage on Utilization. Since the mid-1960s, various experimental health insurance programs had been operating in the Gunsan/Okgu area. In 1979, KHDI took over the operation of the most recent experiment in that area to learn how such a financial mechanism might operate. KHDI established the premiums for subscribers at ₩400 per person among the "non-poor" and charged the "poor" one-half that amount, subsidizing the remainder. By mid-1980, enrollments in the insurance program had risen to over 10,000 subscribers from around 6,500 in mid-1979, with over half the subscribers being from the target population residing in Okgu Gun.

From September 1979 to June 1980, the number of medical visits increased from 8.36 per 100 enrollees per month to 21.68 per 100--an increase of over 2.5. In addition, consumers altered their utilization pattern often enrolling in the insurance program. In Table 2, data are presented which demonstrate this change toward use of private physicians and away from rural primary health care units established under the project. (Compare 1979 and 1980 outpatient percentage figures.) In addition, hospitalization care shifted to private clinics operated by physicians or to the large general hospital in Gunsan and away from smaller publically operated hospitals in the area. (For additional information on the Okgu Health Insurance experiment, see Appendix C.)

3. Cost

As the Family Health Care Study cautioned in 1974, "It is important to define what is meant by low cost."[9/] The project designers, taking cognizance of this issue, were careful to point out in the Project Paper that the goal of the project was "to create and institutionalize a process . . . at a cost affordable by the government, i.e., a cost reasonable enough to permit replication to target populations throughout the country

9/ Family Health care, Steps Toward a National Health Strategy for Korea, AID Contract No. AID/ASIA C 1089 (Korea), (Washington, D.C.: Family Health Care) 1974, p. B-7.

Table 2. Okgu Health Insurance Subscribers: Distribution of In- and Outpatient Services by Utilized Medical Facilities, 1979 and 1980

Facility	Outpatient Services		Hospitalization	
	1979	1980	1979	1980
PHU and CHC	55.2	46.5	-	-
Clinic (private)	37.4	51.3	27.0	50.7
Hospital	7.4	1.3	68.2	9.3
General Hospital	-	0.9	4.8	40.0
Total	100		100	

1979: September-December 1980: January-June

Source: Sung Woo Lee, "Cost and Financing Patterns of PHC at the Community Level: Republic of Korea," Paper prepared for the WHO/UNICEF Workshop on Cost and Financing of PHC, Geneva, December 1-5, 1980, mimeo.

within the nation's resources."[10/] However, this definition of the term "low cost" requires further scrutiny. A program which is low cost to the government may not be "low cost" to consumers, either absolutely or relative to some other option which they may decide to consider. Furthermore, a "low cost" delivery system at any given time, e.g.. in 1976 or 1978, may not be the "low-cost" option at another time for at least three reasons: (1) absolute or relative input price changes may have occurred, (2) economies and/or diseconomies of scale may or may not be realized, and (3) demand patterns for services may change. Finally, it is unclear whether "low cost" to the government means to the central government only, to the MOHSA of the central government, to county or gun governments as well as to the central government, or to the government as a whole, i.e., synonymous with the nation or society as a whole. Finally, the equity issues in sharing the "low costs" must be considered. The incidence of the "low cost" to one government unit or group of consumers may be considered by others as not so "low cost."

10/ Korea Health Demonstration Project Paper, AID-DLC/P-2093, op. cit., 1975, p. 1.

Given the above discussion, the analysis turns to a determination of just how "low cost" a "low cost" Korean Health Demonstration project visit really is. Dr. Yeon of KDI analyzed this problem using 1978 data.[11] His methodological procedures were employed to estimate the average cost for 1980, the last year of the project. The comparative 1978 and 1980 data on total cost, average cost, and utilization patterns for the three demonstration health centers and a sample of primary health units are presented in Table 3. The data show that the mean cost per curative visit to a health center has increased by approximately 5 percent from ₩3,730 in 1978 to ₩4,000 in 1980. In rural primary health units, the average cost rose nearly 75 percent from ₩93 to ₩1,620. For the same period, the increase in average cost for all contacts, curative and preventive, increased by 78 percent in health centers and 41 percent in primary health units.

The primary reason for the rise in average cost per visit during this 1978-1980 period is largely attributable to significant declines in utilization patterns, as can be seen in comparing the 1978 and 1980 mean annual contact/visit data for health centers and primary health units. The two most significant declines in usage appeared in the health center preventive services (55 percent) and primary health unit curative services (42 percent), so that economies of scale in the provision of services were not realized. As can be seen by the comparative total cost data for the two types of facilities in the two years, only minor increases occurred between the two years.

Whether these average cost figures or the changes in them are "high" or "low," "affordable," or "too expensive" depends on who has to pay and how much, so that the total cost of operating the facility is somehow covered, thus sustaining the health care delivery system which was developed under the KHDI project. One way to analyze the affordability of the health care systems developed is to review Figures 1 and 2 in which scatter diagrams of the estimated 1980 average cost for curative and all contacts at 15 primary health units are presented, along with a plausible fitting of the average cost curve.

In Figure 1, for curative contacts, the data tend to show a continuously declining average cost curve which may reach a low point at around 5,000 vists per year--over twice the average number of visits seen in PHUs in 1980--with the corresponding average cost per visit being around ₩700 (1980 prices).

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[11] Ha Cheong Yeon, "Primary Health Care in Korea: An Approach to Evaluation," (Seoul, Korea: Korea Development Institute, 1980).

Table 3. Total Cost, Preventive and Curative Contacts, and Average Cost: Comparative Data for Korea Rural Health Facilities, 1978 and 1980

	Total Cost 1,000 Won—Current		Total Visits				Average Cost 1,000 Won—Current			
			Curative		Preventive		Curative Contacts		Total Contacts	
	1978	1980	1978	1980	1978	1980	1978	1980	1978	1980
Health Centers Average (N=3 Guns)	92,211	106,831	8,032	8,680	17,060	7,576	3.73	4.00	3.68	6.57
Substructure PHUs Average (N=3 Guns)	7,129	7,189	4,044	2,352	3,352	2,981	0.93	1.62	0.96	1.35

Source: Appendix D Table D.4.1.

Note: The figures shown in Table 3 do not conform to Dr. Yeon's methods in one important respect. In the calculation to total and average cost presented here, the other costs, i.e., not direct preventive or curative service costs described in Dr. Yeon's book (p. 84 and Table 6.2 p. 85) are included in the total costs allocated. They are apportioned between preventive and curative services on the basis of the ratio between direct curative and preventive costs developed by Dr. Yeon (Table 6.2 p. 85). These figures are presented rather than Dr. Yeon's, because they represent the actual average total operating cost which must be covered by the authorities who operate the service facilities.

Figure 1. Estimated Average Cost (Curative Contacts) KHDI Primary Health Units, 1980

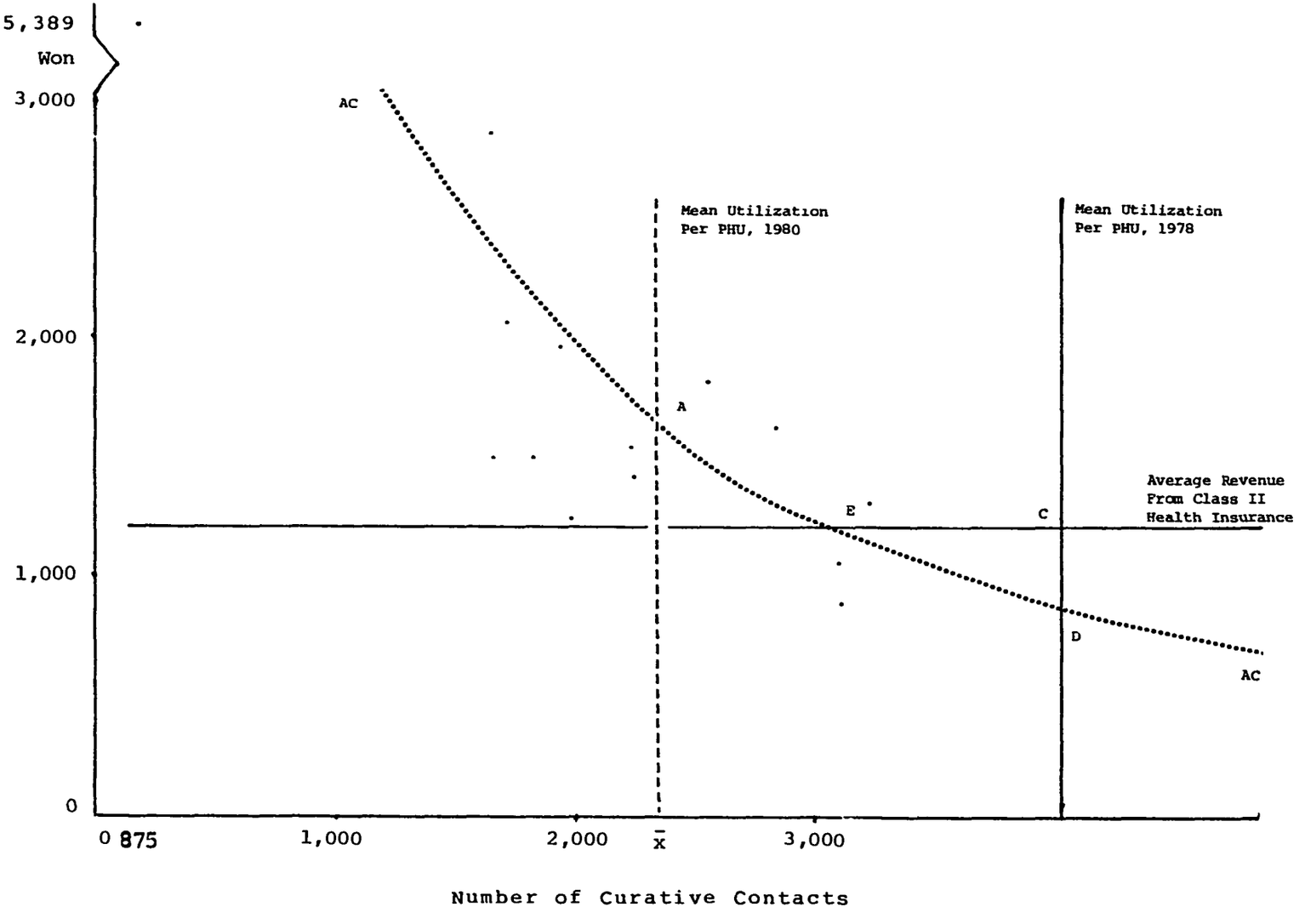
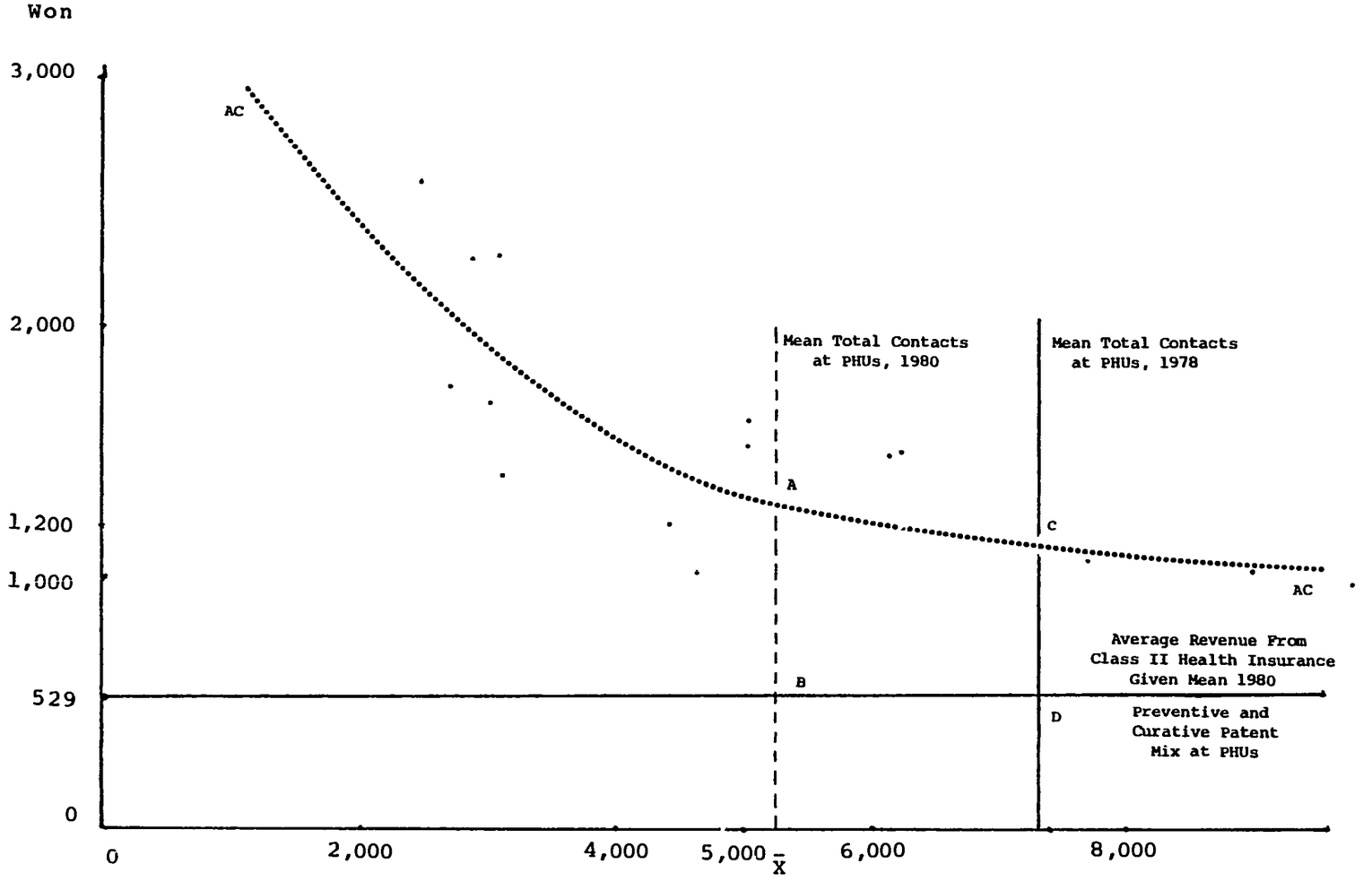


Figure 2. Estimated Average Cost (All Contacts) KHDI Primary Health Units, 1980



In Figure 2, the average cost curve for all contacts (preventive and curative) is sketched in from the scatter points available from 15 primary health unit facilities in the three demonstration areas. It has a similar shape to the curative visit average cost curve presented in Figure 1, with most facilities in 1980 operating in the economies-of-scale range of production.

4. Financial Sustainability

Basic Analytics. The KHDI project has been experimenting with alternative insurance schemes during its existence in order to ascertain whether it would be feasible to cover a significant portion of the cost from nongovernment sources, given the expressed government desire to minimize health care delivery subsidies for all but the "poor," based on the class I and II medical insurance programs begun in 1977.[12/] The average reimbursement revenue to primary health units per curative contact from the class II insurance cooperatives established in each experimental county has been incorporated into Figures 1 and 2 to ascertain the extent to which the primary health units can be sustained from that revenue source and thus to shed additional insight on the affordability issue.

At 1980 mean utilization levels for curative contacts as depicted in Figure 1, average revenue equals ₩1,200 per visit or the distance $\overline{BX}$. Given 1980 input use, average cost per visit at the level of utilization approximated ₩1,650 per visit, or $\overline{AX}$; cost per visit is greater than reimbursements per visit by AB, or about ₩450 (about 38 percent greater than present reimbursement levels). If curative utilization levels would again approximate 1978 levels, ($\overline{X}$ in Figure 1) per-visit reimbursements would exceed average cost by around ₩300 or the distance CD; this could conceivably be used to partially cross-subsidize the cost of preventive services provided at primary health units. According to the information supplied in Figure 1, curative utilization patterns would have to increase to around 3,200 visits annually--point E--(approximately 35 percent greater than 1980 mean levels) in order for the experimental class II reimbursement rates to be greater than the average cost per curative contact. Figure 2 presents a similar analysis which includes both preventive and curative contacts. The insurance reimbursement line reflects the

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12/ See Chong Kee Park, "The Organization, Financing and Cost of Health Care," in Chong Kee Park, ed. Human Resources and Social Development in Korea, Essays on the Korean Economy, Vol. 4, (Seoul, Korea: Korea Development Institute, 1980), pp. 97-168. See Appendix C for information on other financing alternatives considered by the government via the project.

1980 distribution of contacts between preventive and curative services. If 1978 use patterns were prevailing rather than those in 1980, the size of the differential requiring financing from other sources could be reduced by about ₩175 per visit.

Until 1981, KHDI covered at least 35 percent of the total program costs in each demonstration area (see Appendix D, Table D-4.2). Other revenue sources are available, however. The medicaid program which is funded by the central and local (province and county) governments, expects to spend around W50 billion in FY 1982. In 1980 in Gunee Gun alone, the primary health units, and health centers were reimbursed over W11.8 million from the medicaid program (about 7 percent of the total gun health care system expenditures). Second, through central and local tax revenues, the governments are providing support for the preventive program by paying CHA staff salaries and other operating expenses. This support represents about 25 percent of the total operating costs of rural PHUs operating at 1980 mean utilization rates.

Given these alternative sources of support presently available, it is instructive to determine the extent to which an "average" PHU can cover its annual operating costs given 1980 prices and utilization patterns. This situation is graphically depicted in Figure 3 which shows the total cost and total revenue picture prevailing in 1981, assuming 1980 cost and utilization patterns.

Assuming that the central and local governments will cover the total cost of the preventive health programs, the total revenue and cost functions of the typical PHU will be as the line labled HE to the mean level of preventive contacts prevailing in 1980 (about 3,000 contacts). At that point, the total cost curve, labeled HEAB, discontinuously shifts upward to the AB portion where increasing curative utilization suggests economies of scale (refer to Figure 1).

The total revenue curve, HEG, also shifts rotationally upward as depicted. The extent of that upward rotational shift depends on the extent to which class II health insurance reimbursements conform to the expected rate of ₩1,200 per contact,[13] the proportion of medicaid patients and the average reimbursement

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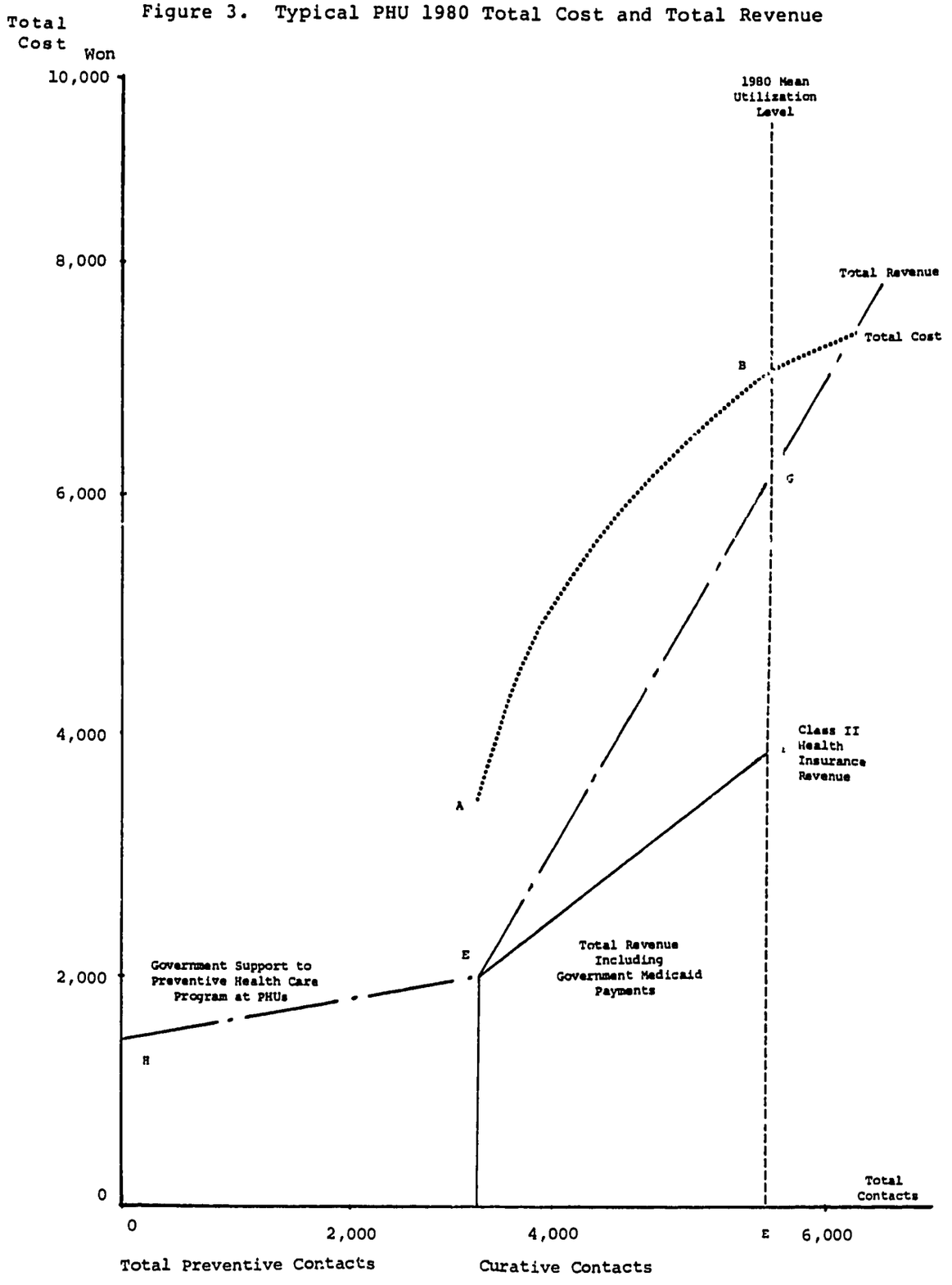
[13] In Figure 3, it is assumed that total reimbursements will equal ₩1,200/per contact. In 1981 the Korean Federation of Medical Insurance Societies established a physician Reimbursement Bill Review Board to check for "appropriateness."

Figure 3. Typical PHU 1980 Total Cost and Total Revenue



per medicaid patient.[14] The data presented in Figure 3 are summarized below in Table 4.

Table 4: Total Cost and Total Revenue for Typical PHU, 1980

	Amount in Million Won (₩)	
Total Cost		7.20
Total Revenue		
Government Support of Preventive Services	2.00	
Class II Health Insurance	2.90	
Medicaid	1.30	6.20
Deficit		(1.00)

Surplus or (Deficit). It is clear from reviewing Figure 3 that with additional curative utilization (the figure suggests an increase of about 650 contacts per year, or 25 percent over present levels), total revenue would be greater than total cost (about ₩7.4 million at that level of utilization). Unfortunately, class II insurance is not presently designed to elicit the appropriate consumer response that would increase the use of PHUs, particularly since it reimburses physicians such that the relative price differential between CHP and physician diagnostic services has been eliminated. In addition, the CHP's scope of practice was curtailed in late 1980.

An Alternative Financing Option. First, it is important to recall that most health and medical care services are financed directly by user charges (85 percent in 1976). In addition, the total annual operating expenses of the rural primary health units introduced in the KHDI project comprised only around 3 percent of the total medical expenditures per household as reported in the KHDI administered household surveys conducted in 1976 and 1979, thus reinforcing the pervasiveness of private payments. (See Appendix D, Table D-4.3 for details.) Finally, available evidence suggests that the expenditure elasticity of demand for medical care is greater than 1.0 (Appendix D, Table D-5.1). Given such a figure, expenditures on medical care services will

[14] The data on medicaid used to develop figures were from the Gunee Gun PHU's 1980 experience in a report provided to the evaluation team. It was assumed that about 27 percent of curative contacts were medicaid cases, which yielded an average ₩1,900 per reimbursement contract.

increase (or fall) more than proportionally as personal income rises (or falls). Since incomes have generally been increasing rapidly in Korea (at approximately 10 percent per year) expenditures on medical care have been growing more rapidly.

It was demonstrated up to 1978 that primary health care as developed and implemented via the demonstration project can compete for market share. Competitive forces were threatened, however, and restricted the scope of practice of the PHC providers trained through this project. Utilization has dropped. The introduction of class II health insurance with its change in relative prices (as a result of its coverage of private physician services) between paraprofessionals operating through the demonstration projects' established delivery system and private physicians, together with the introduction of alternative service physicians, has placed the primary health care system in the demonstration areas in great jeopardy. This has occurred despite the increased availability of private resources for medical care as suggested from the data on expenditure elasticity of demand for medical care and the trends in income and expenditure growth in Korea.

IV. LESSONS LEARNED

1. Developing a new institution such as KHDI outside of the governmental ministerial structure, for the purpose of designing, implementing, and evaluating a new, potentially national health care system is a risky endeavor. Many of the current sustainability issues arise from the system's birth outside traditional government ministry support structures. The early growth phase of the project and its initial success in attracting consumers were badly eroded when the Ministry of Health viewed the fledgling system as potentially competitive. Thus, it supported the political efforts of physicians to circumscribe the paraprofessional's scope of medical practice.

Coordination bodies, such as the National Health Council, never functioned successfully to obtain consensus among the various ministries and interested private groups such as the Korean Medical Association and medical schools.

2. Financial sustainability is largely determined on the basis of analysis which incorporates information on the economic forces at work in the market for health care services. Much of this report focuses on the various aspects of this sustainability issue. Dr. Yeon's excellent evaluation study, available in draft form in 1979, systematically addressed many of these issues at that time. Virtually no attention was given to that analysis which clearly indicated a significant financial problem facing the delivery systems that were implemented. The economic environment of the newly emergent systems became increasingly

hostile subsequent to Dr. Yeon's analysis. Without continuous monitoring of the economic effects of potential policy changes which might affect the emergent system and provide the means for such analysis to be seriously reviewed by policy-makers, such projects as the one developed and implemented by KHDI will be short lived after donor support has been removed.

3. An incentives and contextual analysis of all the potential actors who may be involved in designing, implementing, and sustaining the project intervention--in this case, rural primary health care--must be conducted before completing the project's design. Without such an analysis, the implications of various envisioned policy changes and the introduction of new health workers will not be addressed in the initial phases of project design. An analysis of the incentives of all providers as well as consumers within the health care system can assist in determining what will motivate each group to participate. A thorough analysis of consistency and conflict in government policy vis-a-vis these actors is required.

As one example, deployment of CHPs and alternative service doctors to the same area or facility creates a situation in which they are competitive with each other. The government should study the use of each type of provider in order to make a policy decision about which type of provider to use in rural areas.

Another example of the importance of contextual and incentives analysis was provided when Korea decided to implement class II insurance in rural areas in 1981. It would have been relatively easy to predict the potential difficulties with respect to provider mix, premium compliance, and consumer preferences of the various components of the insurance program. Alternative options could have been considered prior to implementation.

4. Access to curative medical care initially increased within the KHDI system. Since the end of the project, utilization rates have declined. It is unclear whether this change affected the overall health status of the population.

5. All categories of people interviewed, government officials, providers, and villagers in both the control and demonstration areas believed health status had improved since 1976. However, they attributed this increase primarily to rising incomes, better nutrition, and better education. The importance of improved health care delivery was infrequently mentioned (see Appendix E). The most important health status effects achieved through this project were obtained via the health education efforts of the Community Health Aides working with village volunteer workers.

POSTSCRIPT:

LONGER TERM FINANCING IMPACTS OF CLASS II HEALTH INSURANCE

Author's Note: On July 1, 1981, shortly before the impact evaluation was conducted, the Government of Korea implemented an experimental compulsory class II health insurance program. (See details of class II programs in Appendix C.) Since the program was experimental and since the effects of this program would not become totally apparent within the period of this evaluation, the empirical evidence supporting the analysis of the likely impacts of the program were considered to be too speculative to be included in the body of the text. However, the autnors consider this analysis of the likely impact of this significant intervention very instructive to policy makers in Korea and in other countries. Thus, the postscript format.

This postscript analyzes the two important likely impacts of the class II program on the long-run sustainability of the primary health care system as developed by the KHDI project. These two impacts can be classified under the headings of provider mix and premium compliance. These impacts have been ascertained primarily from the team's field interviews with over 130 different individuals throughout Korea, from rural consumers and providers to government officials at all levels.

I. PROVIDER MIX

First, some providers will be better off and others will be adversely affected by the class II insurance. The initial beneficiaries include general practitioners and privately operated clinics in urban areas, as long as the presenting problem is not serious and the cost of service is less than ₩1,200 (including cost of the doctor's time). Many general practitioners interviewed reported significant increases in the daily utilization rate, with one physician reporting an increase of more than 70 patients per day! However, if seriously ill patients present themselves for care, the fixed reimbursement fee of ₩1,700 will tend to dissuade physicians from providing additional care to such patients without further reimbursement. This possibility was pointed out by physicians as a potential problem and could lead to patient referrals to other governmental providers unless the reimbursement schedule is revised to allow for differential fees to cover the cost of the different services provided.

In Okgu, dissatisfaction was expressed by the local medical association with the government's decision to have only a limited set of doctors authorized to handle class II beneficiaries. The local government acknowledged that the number of authorized phy-

sicians was insufficient to deal with the increase in patient volume and decided to alter its administration of the program according to the medical association's preference.

Several provider groups will be adversely affected by this insurance program. These include licensed midwives, "limited practice" doctors (those who are elderly and/or who migrated from North Korea after the hostilities ended in 1953), pharmacists, and traditional herb doctors and herbal medicine dealers. These service providers are not presently covered under class II, although according to the design of the program, all but the pharmacists could conceivably receive reimbursement under the plan if they would provide an agreed-upon price list for a precisely defined set of services. During the time the above providers have not been covered by class II, the relative price of authorized physician services has fallen in comparison to their services. Thus, every one of these provider groups has begun and will continue to register a significant decline in use. Pharmacists will suffer the least since there is a well established pattern by consumers for seeking some form of over the counter medication to minimize symptomatic suffering from headaches, stomach pain, and diarrhea. However, both midwives and traditional practitioners consistently reported a significant loss of business in the month following the introduction of the class II program. Most reported that they would either retire early (a common response by older, limited physicians as well), move to a new county, or change their primary line of work. (One pharmacist reported that he plans to expand his fruit orchard and gradually reduce his work in the pharmacy.)

It was unclear how CHPs would be affected by class II. Those who were located far from a physician tended to report increases in their workload since July. However, the CHPs who were located closer to a town found that more consumers were by-passing them and going directly to the authorized physician to minimize the time involved in obtaining care and to receive a perceived higher quality of care,[15] despite the class II program requirement that consumers be referred to physicians rather than going to them directly.

Finally, as in the case of hospitals under the Okgu medical insurance program, the larger, often government-run facilities will experience increases in patient volume, given the coverage

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[15] No carefully designed comparative quality of care study has been performed during the KHDI project. There are many examples of such studies. One possibly relevant model study is that recently completed (1980) for the Robert Wood Johnson Foundation by the University of North Carolina on Rural Primary Health Care Providers in the U.S.

embodied in the class II insurance package. Whether the increased cost resulting from the increase in volume will be covered by the reimbursement fee is unclear.

II. PREMIUM COMPLIANCE

The most pressing concern expressed in the field by government officials, insurance program directors, gun chiefs, myon chiefs, and health officials with respect to the class II program was their fear of premium noncompliance. All eligible beneficiaries under the compulsory class II program received their entitlement cards in the mail near July 1, 1981. They were presented with their individual household premium bills near the end of July. The evaluation team queried beneficiaries about their premium payment plans and whether they agreed with the price category in which they were placed. The people had all received their bills and were generally aware of the provisions of the program.[16] Most villagers were reluctant to discuss their payment plans but did point out that during the summer, they had very little cash with which to pay monthly premiums, let alone buy food or other essential commodities.

Finally, most villagers wondered why their household was not placed in the lowest premium category of ₩400 per person per month rather than in the ₩600 or ₩800 category. The team found considerable differences in the methods followed for categorizing, from a democratic town meeting process that was used in one myon to other more autocratic procedures that were followed elsewhere. It was clear that gun, let alone multi-gun equity standards have not been established. Premium equity is causing and will continue to cause many administrative difficulties in the months ahead.

The most important reason for considering the long-run impact of the class II insurance program on the health care systems developed by KHDI in the three guns is related to financial sustainability. Premium compliance is an obvious concern.

First, it was learned from the experience of the Okgu Medical Insurance Program that more revenue was actually collected from the "poorest" people when the monthly premium was subsidized by KHDI by 60 percent (from ₩400 per person per month to ₩200) in comparison with that collected from the nonsubsidized, more well-to-do. The voluntary rate of program

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16/ People from adjacent guns were generally unaware of the program with the exception of some Chuncheon City residents who had traveled to Hongcheon.

participation was higher among those whose premiums were subsidized by more than 100 percent compared to the nonsubsidized group.

Second, after the first 10 days of premium collection in July and early August, after which the premiums were "past due," only 5 percent of all premiums were actually collected as shown in Table 5 below.

Table 5. Status of Premium Collection of Class II Medical Care Insurance in the Three Experimental Areas After First Month of Experience

Area	Won(₩) Collected	Percent of Compulsory Premiums Actually Collected	Date of Information
Hongcheon	2,396,200	5.1	5th August
Gunee	1,964,600	8.4	6th August
Ogku	1,396,000	3.1	5th August
Total	5,756,000	5.0 average	

Source: County Health Insurance Directors' offices.

Collection rates were eventually expected to rise to 90 percent according to the Ministry of Health; unofficially, many thought that it would be optimistic to expect more than 50 percent compliance.

It has been suggested by some informed individuals that it would be useful to consider using the agricultural cooperatives as an institutional mechanism for assisting insurance directors with premium collection. Other officials express concern with such use, pointing out that the agricultural cooperatives already have problems in collecting fertilizer loans made to farmers during the previous growing season.

In any case, the problem of compliance is clear. Whether the final rate obtained in premium compliance is 10 percent, 30 percent, or 50 percent, the insurance cooperatives will soon face many reimbursement bills for services rendered by physicians, hospitals, and even PHUs and HCs, and will have few financial resources collected from the people to pay them. How much and for how long is the central government willing to subsidize this experiment?

Since 1978, there has been a shifting demand pattern for primary health care, away from curative care in the demonstration facilities via CHPs. These trends have been spurred on with the advent of class II insurance. The long-run financial sustainability of "low cost" and "affordable" primary health care remains in doubt without increased governmental subsidy either directly to the county health departments or *via* subsidies to the projected deficit-ridden class II health insurance program.

The cost analysis presented above (Figure 3) shows a projected budget deficit for the typical PHU established under the KHDI project even without the additional reduction demand and the compliance problems associated with class II. With the advent of class II and related health policy changes described above, the long-run sustainability of the health care system established *via* this project is even more bleak.

APPENDIX A

METHODOLOGY OF STUDY AND WORK ITINERARY

I. METHODOLOGY

Both the American and Korean evaluation team members benefitted from the wealth of reports and documentation available to them prior to the beginning of this evaluation (see Appendix F for bibliography). This enabled the team, after meeting in Korea, to come quickly to an agreement on the kind of information it needed to collect in the field and in Seoul to conduct the impact evaluation.

Since the project area covered three guns, the team believed it important to visit all three guns and to talk with local officials, as well as providers within and outside the KHDI system.

The team assumed that since the class II insurance program had begun on July 1, 1981, all physicians would be affected by this new development. We also assumed that all physicians would experience referrals from CHPs and that their attitudes and degree of acceptance of this intermediate provider of health care would be important to our findings.

The team also decided that it was important to talk to as many senior CHPs, CHAs, and VHAs who had been on the job for at least two years as possible. How many CHPs could be visisted could only be determined after arriving in a particular gun.

As consumer acceptance of this model was a key variable in all previous evaluations, the team agreed to interview as many villagers in the demonstration area as time would allow.

The evaluation team drew up a set of questionnaires to be used in the field. The questionnaires were individualized to be specifically oriented towards local government officials, providers-project and nonproject doctors, CHPs, CHAs, and VHAs-consumers of health services, and insurance cooperative officials. The questionnaires are found at the end of this Appendix.

The Korean team members believed that it would be valuable to expose their American counterparts to other health demonstration projects prior to beginning the evaluation This would serve as an introduction to problems of delivering health care to rural areas in Korea. Two projects were visited: a pilot project in Choonchon, adjacent to Hongcheon Gun, conducted by the School of Public Health of Seoul National University, and the Kangwha Island project of the Yonsei Medical School.

After visiting these two demonstration projects, the team began a series of interviews with the new President of the KIPH, Chan Moo Park. Interviews at KIPH included former KHDI staff members:

Former Division Chief, Mr. Ahn Sung Kyu
Senior Researchers, Joo Shin Il (MCH project)
Song Keun Yong (former project and evaluator)
Dr. Lee Sung Woo (Manpower Training Division Head)

The team also conducted an interview with the MOHSA health administrator in which the overall health strategy for the 1980s was discussed. Interviews also took place at the KHDI headquarters of the National Health Secretariat with health economists Dr. Park Chong Kee and Dr. Yeon Ha Cheong. During the period July 19-July 31 (see itinerary at the end of this Appendix), the evaluation team, consisting of two Americans (a senior health economist and a public health advisor from AID/ Washington) and two Koreans (a health sociologist and a cultural anthropologist, visited the three KHDI health project demonstration areas: Hongcheon Gun, Kangwon Province; Okgu Gun, Chun-buk Province; and Gunee Gun, Kyung-buk Province. (See profiles of project areas in Appendix B.) They were assisted in the field by KIPH (KHDI) staff.

The team divided into two groups, with an American and a Korean on each team, in order to maximize the use of their time in the field. Interviews were conducted as follows:

1. Local government officials: 3 gun chiefs, 3 myon chiefs, and 5 health insurance cooperative staff members

2. Project doctors: Hongcheon(6), Okgu(1), Gunee(4)

3. Nonproject doctors: Hongcheon(3), Okgu(3), Gunee(1)
   Herbalists: Okgu(2)
   Herbal medicine dealer: Hongcheon(1), Gunee(1)
   Midwife: Okgu(2)
   Pharmacists: Hongcheon(3), Okgu(1), Gunee(1)

4. CHP: Hongcheon(5), Okgu(4), Gunee(3)

5. CHA: Hongcheon(1), Okgu(1), Gunee(1)

6. VHW: Hongcheon(1), Okgu(1), Gunee(1)

7. Interviews for the final grass-root impact with village consumers

   Hongcheon: Nam-myon(2), Sidong(2), Dong-myon(10), Jawoonri(1), Sangwhakeri(1), Duchon(4), Bangnari(6)
   Okgu: Daekwang(4), Seosoo-myon(5), Changori(1)

Gunee: Kunee-eup(3), Dongsanri(13), Koromyon(1), Daheung-dong(6), Okog-dong(1), on the side of farming road--Control area (5) Kimchon, Kubong-myon.

Upon returning from the field, the team processed and analyzed the data it had gathered to write the final report.

Questions Asked of Local Government Officials

1. (a) What were the most important projects in your gun last year? Next Year?
   (b) How does the health demonstration project fit into these priorities?

2. What does health mean to you?

3. What percentage of your budget goes to health improvements?

4. How much money did you receive from KHDI for your project last year? For salaries, drugs, other; enumerate?

5. From what sources will you obtain the funds necessary to continue the project, by item (e.g., salary)?

6. Do county officials in other counties share your views about health programs and priorities?

7. Do people in your county support your views of the health project?

8. Have you convinced your family (if any) living in the area to join the class II health insurance scheme?

9. What is your opinion about the compulsory aspect of the insurance program?

10. (a) Why didn't many people join the insurance program?
    (b) What reasons did people give for not joining?

11. What type of training or "sensitizing" was done initially to gain physician support?

12. How were doctors chosen to supervise CHPs?

13. What kind of health services statistics/records do you keep? Can we have a copy?

14. Has the health of the people in your area improved?

15. Why do you think so?

Questions Asked of Providers

Project Doctors

1. a. Would you work with a CHP?
   b. Are you working with a CHP now?
2. Are you supervising or training CHPs now?
3. How much physician time is spent on supervision?
4. Why do you supervise?
5. Are you paid extra to supervise? If yes, how much?
6. How many people visited you yesterday? Last week? Last month?
7. Have more people come recently (last 3 months) than when you first started working (first 3 months)?
8. When did you first start working here? What month? Year?
9. How many people visited you at the beginning?
10. If you could obtain assistance from the government for one additional project item, what would you ask for?
11. a. Will CHPs increase or decrease the number of patients coming to you?
    b. Will CHPs increase or decrease your income? Why?
12. Are you expecting to move in the next 3 months? If so, why?
13. Have you seen any mistreated patients?
    a. Any who were first treated by CHPs?
    b. If so, what did you do?
    c. How long ago did you see these patient(s)?
14. Since you began practicing in this area, has the health of the community improved?
15. Why do you think so?
16. How would you change this project if you were asked to implement it in the adjacent gun?
17. How do you get paid?

18. a. Do you charge any fees? If yes, how much and for what services?
    b. Do you charge each person the same amount?

19. How do you collect your money?

20. Do you receive any money from insurance programs?

21. a. What percentage of your patients have insurance?
    b. What types of insurance do they have?

22. Where do you get your drugs?

23. a. How long did your first supply of drugs last?
    b. How often are you resupplied?

24. Do you have to pay for your drugs?

25. How many other health care providers are in your area? Please enumerate and give name and place.

26. What percentage of your patients went to some other provider before seeing you last week?

27. What are your hours of work?
    How many days per week do you work?

28. How much did you earn last year from your practice of medicine?

29. Did you have other sources of income? If yes, how much and from what sources?

Nonproject Doctors

1. Why are you not participating in the program?
   Were you asked not to participate?

2. If you were asked to participate in the future, would you participate?

3. Do you employ any people? If so, who? What are their responsibilities?

4. What are your hours of work? How many days a week do you work?

5. How many people visited you yesterday? Last week? Last month?

6. Have more people come recently than when you began? When did you begin? What month? Year?
7. How many people came at the beginning?
8. How do you get paid?
9. Where do you get drugs?
10. Will CHPs increase or decrease the number of patients you see weekly?
11. Do you trust the services provided by CHPs? If not, why not?
12. Are you expecting to move in the next 3 months? If so, why?
13. Have you seen any mistreated patients who were first treated by CHPs?
14. What did you do?
15. How long ago did you treat this person?
16. How many other health care providers are there in your area? Please enumerate and give name and place.
17. What percentage of your patients went to another provider before seeing you last week?
18. How much did you earn last year from your practice of medicine?
19. Did you have other sources of income? If yes, how much and from what sources?

CHPs

1. Why did you want to become a CHP?
2. What duties did you perform in your previous job?
3. What duties are you currently performing?
4. Did your training prepare you for these duties?
5. What duties do you have difficulty performing?
6. Could you do them if you had additional training?
7. Has there been a refresher course in these areas?

8. Did this help you?

9. You have attended several refresher courses. Have they been on subjects of primary importance to your work?

10. Who decides what topics will be covered in refresher courses?

11. How many patients did you see yesterday? Last week? Last month?

12. What are the most common diseases you treat?

13. How many patients did you refer?

14. For what reason did you refer the patient?

15. To whom did you refer the patients?

16. Did you ever have an unexpected reaction to your treatment? If so, what did you do? Elaborate.

17. When was the last time you used the telephone to get advice on service care? Elaborate.

18. What are the five main reasons people seek your services?

19. Last week, how much time did you spend on curative services? Preventive services?

20. Has your workload increased since you first began? By how much?

21. Who supervises you?

22. When was the last time you were supervised?

23. When do you expect to see your supervisor again?

24. Have you ever run out of a medicine? If yes, which one(s)? How long did it take you to be resupplied?

25. Does this PHU have a maternal and child health program? Why do mothers come?

26. How many prenatal visits does a client usually make? Is the first visit in the early, middle, or late stages of pregnancy?

27. How do you advertise your services so that mothers will begin to use this service?

28. How do you encourage/motivate mothers to return?

29. Do they return? If not, why not?

30. What type of well-baby services are offered? Is there an immunization program?

31. How much are you paid?

32. Are there extra benefits to being a CHP? What are they?

33. Do your patients use other providers? If yes, which ones?

34. What is the farthest distance people travel to visit you?

35. Could we see the charts of last week's patients?

36. What was your transportation allowance last month? Has it changed recently? If so, how?

37. How much did you earn last year from your practice of medicine?

38. Did you have other sources of income? If yes, how much and from what sources?

39. Since you began your work as a CHP, have you noticed an improvement in the health of your community?

40. Why has the health of your community improved (in your opinion)?

CHA

1. Why did you want to become a CHA?

2. What duties are you currently performing?

3. Did your training prepare you for these duties?

4. What duties do you have difficulty performing?

5. Could you do them if you had additional training?

6. Has there been a refresher course in these areas? Did you attend?

7. Did this course help you?

8. You have attended several refresher courses. Have they been on subjects of primary importance to your work?

9. Who decides what topics will be covered in refresher courses?

10. How many households did you visit yesterday? Last week? Last month?

11. How many patients did you refer?

12. For what reason did you refer the patient?

13. To whom did you refer the patients?

14. Has your workload increased since you first began? By how much?

15. Who supervises you?

16. When was the last time you were supervised?

17. When do you expect to see your supervisor again?

18. How many prenatal visits does a woman usually make? Is the first visit in the early, middle, or late stages of pregnancy?

19. How do you encourage mothers to make the initial prenatal visit?

20. How do you encourage mothers to return?

21. Do they return? If not, why not?

22. What type of well-baby services are offered? Is there an immunization program?

23. How much are you paid?

24. Are there extra benefits to being a CHA? What are they?

25. Do the people in your area use providers other than the CHPs or doctors in your area? If yes, which ones?

26. What is the farthest distance you travel to visit people?

27. What was your transportation allowance last month? Has it changed recently? If yes, how?

28. Is the VHW helpful to you in your work?

29. Since you began your work as a CHA, have you noticed an improvement in the health of the community?

30. Why has it improved?

Village Health Aide

1. Why did you want to become a VHA(C)?
2. How long have you worked as a VHA(C)?
3. How did you become a VHA(C)?
4. Did you receive any special training to become VHA(C)?
5. Where?
6. For how long were you trained?
7. Do you receive any payment for being a VHA(C)?
8. How much? From whom?
9. What services do you provide as a VHA(C)?
10. On the average, how many people come to see you in a month?
11. What are the five most common reasons people come to see you?
12. Do you believe your knowledge and skills are sufficient to meet the demands of other villagers?
13. Are you satisfied with this kind of responsibility?
14. How many retraining activities have you participated in?
15. Did they address your most important problems?
16. Are you planning to continue working as a VHW?
17. In the last month, how much of your time was spent working as a VHW?
18. Are you planning to continue spending this much time in the next 3 months?
19. Has the health of the people in your community improved?
20. Why do you think it has improved (in your opinion)?

Questions Asked of Recipients/Consumers

1. Are you a member of a health insurance scheme program?

2. When did you join?

3. How much is the premium?

4. Have you paid it?

5. How many members of your household are there?

6. When were you or another family member sick last? What did you do?

7. In comparison to five years ago are you and your family members healthier today?

8. Why do you think this is true?

9. Have you ever visited a PHU?

   If the answer is "Yes":

   a. Why did you visit the PHU?
   b. When you use the PHU, are you satisfied with the treatment you receive?
   c. Where did you go before the PHU was available to you?
   d. How far must you travel to reach the PHU?
   e. How much did you pay to travel there?
   f. Are there closer providers of care in your area? If yes, how many? Why did you choose the PHU?
   g. Did you use any other providers along with the PHU?
   h. Was this use of other providers before or after you went to the PHU?
   i. How much did you pay for these services?

   If the answer is "no":

   a. Why didn't you use the PHU?
   b. Where did you go?
   c. Were you satisfied with the treatment?

10. Please give us an example of a minor health problem.

    a. When you have this problem, where do you go for treatment?
    b. Why do you choose this provider?

11. Please give us an example of a serious health problem.

    a. When you have this problem, where do you go for treatment?
    b. Why do you choose this provider?

12. When you are ill, where do you go first for medical treatment?

13. Is there a health committee in your village?

14. What did it do last year?

15. How was the health committee formed?

16. How many people are on the health committee?

17. Is there a health center in your village? Would you like to have one?

18. Does the health center generally have medicine?

19. What hours is it open? Is this convenient? Who is in charge of the health post?

20. When was the last time someone from the PHU visited your village?

Questions Asked of Insurance/Officials

1. How long has the insurance been operating in your Gun?

Class	Date Began
I	
II	
Other? Enumerate.	

2. How many households and individuals are covered by each program at present?

Class	Total # Households Covered	# Households Covered	Total # of Individuals Covered	# Individuals Covered
I				
II				
Other				

3. What is the structure of premiums?

   a. How much is charged per month per individual?
   b. Does every household pay the same amount?
   c. If not, who pays what?

4. How do you collect the premium?

5. Does everyone pay on time? If not, why? What do you do?

6. If a provider submits a bill for reimbursement, how long does it take for it to be paid?

7. What are the benefits of the health insurance plan?

   a. What services are covered? Enumerate.
   b. Has the benefit package remained stable? If not, elaborate.

8. Are you able to be self-sufficient from government subsidy? If not, how much was received from the federal government, provincial government, local government, or premiums?

9. If you are receiving government subsidy, what will you do if it is reduced? What did you do in the past?

WORKING ITINERARY FOR HEALTH IMPACT EVALUATION TEAM

July 12 Arrive in Country: Oldwine & Dunlop

July 13 Meet with Team members from Korea: Chung and Kim
Organize ideas and itinerary

July 14 Meet with KHDI personnel
Meet with KDI and National Health Secretariat

July 15 Travel to Chuncheon to test ideas re evaluation with consumers, providers, and government officials

July 16 Meet with MOH
Meet with Government Insurance Society (Class I Medical Insurance Societies)
Travel to Kang-Wha Province (Class II Health Insurance System Observation)

July 17 AM--Work on protocals
PM--Revise protocals

July 18 Free--Read

July 19 4 PM--Travel to Hongcheon Gun, stay in Chuncheon to begin field work

July 20 Field work in Hongcheon Gun
July 21 Continue Fieldwork
July 22 Return to Seoul afternoon of July 22

July 23 AM--Free/personal writing
PM--Travel to Okgu Gun, stay in Gunsan

July 24 Field work in Okgu Gun
July 25/26 Continue field work

July 27 AM-- Travel to control gun field site, south of Okgu Gun
PM-- Field work in control gun

July 28 Field work in control gun
Late PM travel to Gunee, stay in Taegu

July 29 Field work in Gunee Gun
July 30 Continue field work
July 31 Late PM return to Seoul

August 1 Free

August 2 AM--Free
PM-- Meet with team to discuss tentative-findings report

August 3 Individual report writing
August 4 Report writing continued
August 5 AM-- Discuss report and critique the writing to date

August 6 Edit Report based on discussion
August 7 Finish Report

August 8 AM-- Team review final preliminary draft
PM-- Travel to U.S. by Oldwine & Dunlop

APPENDIX B

ORGANIZATION OF HEALTH CARE DELIVERY SYSTEM IN RURAL KOREA

I. INTRODUCTION TO THE GUN-LEVEL HEALTH CARE DELIVERY SYSTEM

Presently, each administrative gun has one gun health center which provides basic health services, mainly preventive, to the population in the respective gun. This gun health center is staffed with a director, usually a physician, several nurses, a few technical staff, and a number of administrative supporting staff to carry out the services for the entire gun.

Every myon of a gun (normally each gun has about 10 myons) has three nurse-aides dispatched by the gun health center. Each of these three workers is limited in her activity and is only responsible for a single duty: maternal and child health, tuberculosis control, or family planning. The nurse-aides receive directives and guidance from the gun health center. Since they are stationed at the myon office under the direct supervision of the myon chief, they are frequently regarded as myon office personnel rather than as health workers carrying out the health center programs. Often the health workers are medically supervised by either a public doctor of the myon or a private practitioner who runs his own clinic.

In the field of curative services, the majority of the people in the gun area receive care from the private practitioners who usually have their clinic in an eup (village) or a myon area where the gun health center is located. In many myons with a population of 6,000 to 10,000 there are few fully qualified physicians. A limited area practitioner or a young hospital resident, dispatched by the government for a mandatory six-month period, is usually serving the people in a myon.

Other than these preventive and curative health service personnel, there are quite a large number of herbalists, roughly one for each 4,000 to 6,000 persons. Only a small proportion are fully qualified herb medicine practitioners, and the majority are aged men approved only as herbalists to dispense herbs for the patients.

Besides these modern medical practitioners and herbalists, there are many drug vendors who can sell drugs to patients without a physician's prescription. The only category of drugs they cannot sell are narcotics. Usually there is one drug vendor for an average of 3,000 to 4,000 persons.

II. HEALTH CARE SYSTEMS OF DEMONSTRATION AREAS

A. Hongcheon Gun

Hongcheon Gun is situated 100 kilometers east of Seoul in Gangwon Province; 117,000 people live in a surface area of 1,719 square kilometers (population density of 69 per square kilometer). This gun is mostly mountainous with a small area of arable land. Administratively, there are one eup and nine myons. The farthest myon is located 96 kilometers away from the gun health center.

In 1976 there were 13 physicians in the gun, of whom 6 were limited area practitioners. Only one myon was without any physician in this gun. This gives a ratio of 1 physician to 9,000 persons. Besides these physicians, 19 herbalists (one herbalist for 6,200 persons) and 34 drug vendors (one drug vendor for 3,500 persons) were serving the population (see Table B-1).

While the data presented in Table B-1 showed a significant increase in the number of paraprofessional health personnel trained as a consequence of the project, the number of health facilities did not change in any significant way with the possible reduction in the number of pharmacies. A hospital was not constructed during the period and there were no plans to do so as of mid-1981. In addition, the number of clinics had not changed since 1977.

The demonstration project in Hongcheon called "Maul-Geon-Gang-Saup," included restructuring the health services at the myon level for the delivery of primary health care services. A three-tiered service and referral system for primary health care was introduced, with an emphasis on the village health workers at the grassroots level participating in the delivery of first contact primary health care services.

The community health practitioners (CHPs) who had finished their one-year training by the Korean Health Development Institute (KHDI) provided second phase health care to the people in remote villages from the myon office. The physician in each myon acted as the community physician and took care of the patients in the myon and those referred by the CHPs.

The level of care in each category of health units is shown in Table B-2. The first level of care is given by Village Health Agents at the village level. These agents are selected by the village people and trained locally by the KHDI to provide simple curative services and take practical disease prevention measures under the guidance and direction of the CHPs. These Village Health Agents refer cases to the next level of the system, the primary health unit, or directly to the community health center.

Table B-1. Health Facilities and Personnel in the Hongcheon Area, 1975-1981

Classification	1975	1976	1977	1978	1981
Health Facility Hospitals	-	-	-	-	-
Clinics (limited)	12(5)[1]	13(6)[1]	13(6)[1]	11(5)[1]	11(5)[1]
Dental Clinics	1	2	1	1	1
Herb Clinics	2	1	2	2	2
Private Midwifery Stations	2	2	2	2	2
Health Centers	1	1	1	1	1
Health Subcenters	8	8	8	8	8
Pharmacies	14	13	15	13	13
Druggists: Medicine	18	17	17	16	16
Druggists: Herb-Medicine	18	16	16	16	16
Restricted Drug Dealers	5	4	4	4	4
Health Personnel					
Physicians (limited)	12(5)[1]	13(6)[1]	15(6)[1]	11(5)[1]	11(5)[1]
CHP	0	0	6	5	15
VHW	-	-	-	170	?
Dentists (limited)	2	2	1	1	5
Herb Doctors	2	1	2		2
Midwives	2	2	2	2	2
Pharmacists	14	13	15	13	13

[1] Numbers in parentheses are limited doctors.

Source: Hongcheon Gun, Statistical Yearbook, 1976-1979, (in Korean). Updated to 1981 from interviews with gun health officials in July 1981.

Table B-2. Level of Health Services in Hongcheon Gun

Level	Health Worker	Facility	Population Served
First	Village Health Agent Post	Village Health 500-1,000	Ri & Villages
Second	Community Health Practitioner	Primary Health Unit	Sub-Myon 3,000-5,000
Third	Community Physician	Community Health Center	Myon 10,000-15,000

The second level of care is provided by a CHP, who provides limited medical care and preventive health services to the patients and people in several villages and supervises the activities of village health agents in those villages. When the CHPs cannot handle the patients within their limited capacity, the patient is referred to the community physician at the community health center.

The third level of care is provided by the private physician in each myon at the community health center. This physician is designated as a community physician, and is responsible for the medical care of the population in the whole myon and the supervision of the activities of the primary health unit staffed by a CHP.

Three community health aides, health workers already existing at a myon level, were trained for multipurpose primarily preventive health work by KHDI and reassigned to a primary health unit or a community health center. They assist the physicians and CHPs in their areas.

The Hongcheon demonstration area created Maul-Geon-Gang-Daedong-Hoe. The Daedong-Hoe was based on an already existing community cooperative system. (See Appendix C for more detailed information on this financing scheme.) It was expanded to offer private members of the cooperative the following, benefits for the premium cost of ₩1,500 per person for three years' coverage:

1. Various preventive and primary health care services were delivered at primary health units, community health centers, and the health center.
2. For hospitalization, a member could be compensated for up to 10 times the premiums he or she paid and obtain a discount if hospitalized at a designated facility.
3. Patients could be provided transportation by the health center ambulance to a designated hospital (for detailed description of the plan see "Daedong-Hoe" Cooperative,

Kim Kang Hyon and Kim Soo Chun, Background Papers on Health Demonstration Project (Seoul: KHDI, 1978, pp. 161-178).

B. Gunee Gun

Gunee Gun is situated 50 kilometers north of Taegu City, the capital of Gyeongsang Buk Province, with a population of 66,000 in a surface area of 609 square kilometers (population density of 109 per square kilometer). Administratively, there are 1 eup and 8 myons. The farthest myon from the gun health center is located 33 kilometers away.

In 1976, there were five physicians; two were fully qualified, two were residents under training, and one was a limited area practitioner. This gives a ratio of 1 physician to 13,200 persons. In addition to these physicians, there were 11 herbalists (1 herbalist to 6,000 persons) and 23 drug vendors (1 drug vendor to 2,999 persons) in this gun. (See Table B-3.)

Since 1975 there have been a number of changes in the health care system in Gunee. Since the number of physicians working in the country dropped from 13 to 5 between 1977 and 1978, during the period of project implementation, the number of physician clinics dropped from four to zero. However, partially compensating for this reduction in clinics was the completion of a new hospital.

In Gunee Gun, a three-tiered health care system with the main emphasis on the improvement of maternal and child health services was introduced. In this gun, three community physicians were newly recruited and assigned to head the community health centers and five CHPs were assigned to myons without physicians. Besides these two categories of health personnel, one nurse-midwife in each myon was employed to head the primary health post. Table B-4 shows the organization of the health delivery system at each level.

The first level of care is provided at the multivillage level primary health post, serving a community of about 2,000 to 3,000 people. A nurse-midwife and one community health aide are assigned at the primary health post. The nurse-midwife provides emergency care, first aid, and midwifery services; the community health aide does multipurpose preventive health work at the village level.

Table B-3. Health Facilities and Personnel in the Gunee Area, 1975 - 1981.

Classification	1975	1976	1977	1978	1981
Health Facility Hospitals	-	-	-	1	1
Clinics (limited)	6	6(1)[1]	4	-	-
Dental Clinics	1	1	1	1	1
Herb Clinics	1	1	1	-	-
Private Midwifery Stations	1	1	1	1	1
Health Centers	1	1	1	1	1
Health Subcenters	7	7	8	8	8
Pharmacies	6	6	6	6	4
Druggists: Medicine	11	17	17	14	14
Druggists: Herb-Medicine	10	10	10	9	-
Restricted Drug Dealers	6	-	-	-	-
Health Personnel					
Physicians (limited)	4	6(1)[1]	13	3	8[2]
CHP	-	-	5	5	9
CHA	29	29	24	24	24
(VHA) VHC	-	-	-	170	?
Dentists	1	1	1	1	1
Herb Doctors	1	1	1	-	0
Midwives	1	1	1	-	0
Pharmacists	6	6	6	6	4

[1] Numbers in parentheses are limited doctors.

[2] Five are Army doctors providing alternative service.

Source: Gunee Gun, Statistical Yearbook, 1976-1979, (in Korea).
Updated to 1981 from interviews with gun health officials, July 1981.

Table B-4. The Level of Health Services in Gunee Gun

Level	Health Worker	Facility	Population Served
First	Nurse-midwife and One CHA	Primary Health Post	2,000-3,000
Second	Community Health Practitioner and Two CHAs	Primary Health Unit	6,000-8,000
Third	Community Physician and Two CHAs	Community Health Center	20,000-25,000

The second level of care was provided at the myon level with a CHP and two community health aides. The CHP was responsible for primary health care for the inhabitants and those referred from the primary health posts. Each community health aide carried out multipurpose preventive health work for one-third of the myon. Those patients whom the CHP could not handle were referred to the third level community health center, which is located at an adjacent myon.

The third level of care was provided by the full-time community physicians at the community health center, each one covering two to three myons. The community physician at the community health center was responsible for the supervision of primary health units and primary health posts in his area.

At the village level, one health communicator from each village was selected and given three days of orientation training for the project. These village health workers assist the community health aides when they visit a village, and at the same time act as health communicators for the village.

To faciliate the project activities at the health center, one health educator, one sanitarian, one statistical officer, and one dental health worker were recruited by the project and added to the health center staff.

C. Okgu Gun

Okgu Gun is located in the flat fertile region of Cholla Buk Province along the coast of the Yellow Sea, about 250 kilometers southeast of Seoul, where 116,000 people live in a surface area of 330 square kilometers (population density of 354 per square kilometer). Only 19 of the 52 islands are inhabited, and 7,286

people live on these 19 islands (population density of 365 per square kilometer). Administratively, Okgu Gun consists of 10 myons. The farthest island, Ochong-do, is located 70 kilometers offshore.

There were only five physicians in the Okgu Gun, and in 1976 there was none on any of the islands. Four of these five were limited area practitioners. This gave a ratio of 1 physician to 23,300 people. Nine herbalists (one herbalist for 13,000 people) and 23 drug vendors (one drug vendor for 5,100 people) also were serving the population in this gun. Since there are two neighboring cities, Gunsan City and Iri City, a large number of people in this gun utilized the services of physicians and herbalists practicing in those cities. (See Table B-5.)

In Okgu Gun, with a minor modification of the existing health center and subcenters, health care was delivered to the population, backed by the development of an insurance system. (This health insurance system is described in Appendix C.) Since this gun has many inhabited islands scattered along the Yellow Sea, a number of community health aides were deployed to islands to provide the primary health care with the assistance of CHPs who were stationed on a bigger island in the vicinity.

Okgu Gun Maul-Geon-Gang-Saup was divided into two different demonstration areas, mainland and islands. For the mainland, four community health centers were established, each serving two myons. One qualified full-time physician, designated as the community physician, headed the community health center with one CHP posted at an outreach clinic of the second myon. This CHP served the people in the second myon in primary health care and referred those patients who required further consultation or treatment to the community health center. Three community health aides were utilized as multipurpose health workers, each one serving one-third of a myon under the direct supervision of the community physician or the CHP. One additional community health aide was recruited to assist the clinic activities of the community physician or the CHP.

On the islands, one community health center with a qualified physician was established on Songyu Island. One CHP was assigned to an island with a population of 700 or more, and one CHA to an island with a population of less than 700. Patients from these islands were referred to the hospital ship operated by the Gunsan Provincial Hospital to cover these islands.

Table B-5. Health Facilities and Personnel in the Okgu Area, 1975 -1981

Classification	1975	1976	1977	1978	1981
Health Facility Hospitals	-	-	-	-	-
Clinics (limited)	5(4)[1]	5(4)[1]	3(3)[1]	3(3)[1]	3(3)[1]
Dental Clinics	-	-	-	-	-
Herb Clinics (limited)	-	-	-	-	-
Private Midwifery Stations	-	-	-	-	-
Health Centers	1	1	1	1	1
Health Subcenters	6	6	6	-	-
Pharmacies	9	8	8	5	-
Druggists: Medicine	13	12	12	12	-
Druggists: Herb-Medicine	9	9	7	7	-
Restricted Drug Dealers	3	3	1	1	-
Health Personnel Physicians (limited)	6(4)[1]	5(4)[1]	3(3)[1]	5(3)[1]	1[2](3)
CHP	0	0	9	9	7
CHA	NA	34	-	-	42
Dentists	-	-	-	-	-
Herb Doctors (limited)	-	-	-	-	-
Pharmacists	10	8	10	5	-

[1] Numbers in parentheses are limited doctors.

[2] This physician is planning to leave Okgu and return to Seoul in September 1981.

Source: Okgu Gun, Statistical Yearbook, 1976-1979, (in Korea). Updated to 1981 from interviews with gun health officials, July 1981.

APPENDIX C

NOTES AND TABLES ON HEALTH INSURANCE IN KOREA

I. HISTORY OF HEALTH INSURANCE DEVELOPMENT IN KOREA

Medical insurance legislation was first enacted in Korea in 1963. However, little was done to implement that legislation until 1976 when it was amended and substantially revised. The revised law of 1976 established a two-part medical insurance program. The first part (class I) was for workers (and their dependents) of large employers (defined in 1981 as having 100 or more workers). The second part (class II) was originally designed as a voluntary community-based insurance plan for the self-employed, e.g., farmers, and other small employers.

The class I insurance program was made compulsory from the outset and was administered by health insurance associations. By 1981, it covered 6.5 million beneficiaries (see Table C-1 for details of coverage and benefits.) Class II, on the other hand, was only made compulsory as of July 1, 1981, in three demonstration counties and is administered by the local county governments. Total coverage under class II in July 1981 was around 250 thousand with about 75 percent residing in the three counties (see Table C-3).

In addition to medical insurance, the Korean government in 1971 enacted a medical assistance program (called medicaid) for the poor and other low income persons. This program started with 2.04 million beneficiaries and by 1981 had expanded to cover 3.73 million, thus comprising about 9.7 percent of the total population (see Table C-2). Finally, in 1979, the government launched a health insurance program for governmental employees and private school teachers. This program in 1981 covered 3.87 million persons (see Table C-1).

Since 1969, a number of experimental and small health insurance, programs have operated in various parts of the country. (See Table C-3 for detail.) Most of these programs, which have been officially defined by the government as class II, have been operated by colleges and other voluntary organizations. Most programs were fairly small with the maximum number of enrollees being in the Busan Blue Cross scheme (22,800), which subsequently merged in 1979 into the Okgu voluntary health insurance program. All the schemes listed in Table C-3 were based on a monthly premium structure of between ₩400 and ₩1000 per person per month. There is no first won coverage, with hospital and ambulatory benefits for both the principal and dependents based on a co-payment rate of about 60-65 percent.

In July 1981, the Government of Korea initiated test class II health insurance programs in the three counties, Hongcheon, Gunee, and Okgu, where the Korean Health Development Institute

(KHDI) had carried out their project. Currently, there are 138 counties in Korea. Based upon the program experiences in the three counties, the Government of Korea is planning to expand class II health insurance coverage to include nine counties by 1985 and then expand it throughout the 138 counties of the country in the 1990s.

Table C-1. Government Health Insurance Schemes as of August 1, 1981

Insurance Scheme	Total Enrollees (Principals)	Benefits		Remarks (fee)
		Hospitalization	Ambulatory	
Class I	6,502,942 (2,396,302)	80%	50% at Hospitals 70% at GP's	An employees pays 1.5%-4.0% of his salary to cover all dependents and an equal amount of money is subsidized by the employer. About 90% of all class I insurance belongs to the group at the 1.5% level.
Government employees (military personnel and private school teachers included)	3,868,100 (976,637)	Same as above		For government employees, 1.9% of one's salary is paid by the employee and the same amount is sidized by the government. For military personnel, 1.44% of one's salary is paid by the employee and the government subsidizes the same amount of money. For private school teachers, 1.9% of salary is paid by oneself, 0.76% is subsidized by government, and 1.14% is paid by the school.

Table C-2. Medicaid Program as of July 1, 1981

Classification of Recipients	Population (Recipients)	Benefits		Remarks
		Hospitalization	Ambulatory	
Group I	1,556,000	100% Paid	100% Paid	Government pays ₩900 to physician per day per capita for up to four days, and ₩450 beyond 4 days or beginning with fifth visit for the same symptom for ambulatory care.
Group II	1,556,000	50% Paid (50% paid by government and reimbursed by patient in 3 years)	100% Paid	
Group III	1,529,000	50% Paid 20% by Patient (30% paid by Government and reimbursed by patient in 3 years)	100% Paid	

Table C-3. Class II Health Insurance Schemes as of July 1, 1981

Name of Scheme	Responsible Organization	Area	Enrolled Population	Fees/Person/ Month/ (Won)	Benefits: Principal Hospitalization	Benefits: Principal Ambulatory	Benefits: Dependents Hospitalization	Benefits: Dependents Ambulatory	Date Authorized
Busan Blue Cross	Social Charity Voluntary Fund	Busan City	22,848	900	70%	60%	70%	60%	7/29/69
Baiklyung Island	Korea Red Cross	Baiklyung Island	9,251	500	70%	70%	70%	70%	12/6/74
Youngdong	Individual Volunteer	Kangneung	4,841	1,000	70%	60%	70%	60%	
Choonsong	School of Pub. Health SNU	Choonchon City and County	13,000	Urban 700 Rural 350	65%	55%	65%	55%	1/75
Jeungpyung	Catholic Melynol Clinic	Jenugpyung Myon	2,360	400	70%	70%	70%	70%	7/28/75
Samwha	Soochon Hyang College of Medicine	Unsan Myon	2,064	500	70%	60%	60%	50%	8/13/77
Koje Island Blue Cross	Koje Community Health Care Corporation	Koje Island	3,326	700	65%	55%	65%	55%	7/25/74
3 Demonstration Projects	Government	Hongcheon Gunee Okgu guns	76,417 76,529 39,023	(Gp. 1-400(10%)) (Gp. 2-600(80%)) (Gp. 3-800(10%))	80%	70%	80%	70%	7/1/81
Kangwha	Yousei Univ. College of Medicine	Kangwha Island	1,300	500	50%	70%	50%	70%	1975[2]/

[1]/ Total 250,959 (0.7% of total population of Korea).
[2]/ Not a government-authorized program.

II. HONGCHEON DAEDONG-HOE COOPERATIVE PROGRAM

The name Daedong-hoe has long been recongized in the Hongcheon area as a community mutual cooperative gathering where matters of common community concern were discussed and decided.

There are nine Daedong-hoes, one in each township which covers a population of 3,000 to 8,000. In 1980, there were 13,685 members who paid ₩3,000 household admission fee and ₩1,000 per person per year. If they paid these fees in advance they received a discount. They were allowed to make payments all at once, quarterly, monthly, or daily, depending on individual circumstances.

The Daedong-hoe established by KHDI was expected to promote community development, to motivate community participation, and to raise living standards through reducing the financial burden of a family and community caused by ill health. It was intended that through this cooperative, community people would gradually realize that community health problems must be solved by the people themselves in a cooperative manner.

Daedong-hoe seeks to:

-- Promote and foster community development
-- Create funds through collection of membership fees
-- Loan funds for farm income generating programs
-- Educate community people to positively participate in development activities
-- Support VHA
-- Provide members with primary health care
-- Loan funds to members for hospitalization
-- Carry out environmental sanitation, or a nutrition improvement program with the support of Saemaul funds

Daedong-hoe is a health insurance scheme that provides members with (1) free primary health care services at PHUs supported by KHDI and (2) loans up to ₩200,000 per family at 2 percent monthly interest if a family member requires hospitalization. As of December 1978, the 12,117 members had made 35,748 visits to PHUs. As of the end of June 1981, total revenue was W40,326 thousand, ₩20,290 thousand from members, ₩8,000 thousand from KHDI for subsidy, ₩7,208 thousand from monthly interests obtained from borrowers, and ₩4,828 thousand from bank interest). Out of this total revenue, only ₩1,740 thousand has been loaned for hospitalization and ₩404,000 was reimbursed to outmigrants. Currently, Daedong-hoe has a total of ₩38,182 thousand deposited in the bank from which it can earn approximately 20 percent of the deposit in annual interest. The ₩1,740 thousand which has been loaned yields a monthly income

of 2 percent. The future of this fund is uncertain and the local authorities are planning to organize an ad hoc committee to decide upon its future.

III. OKGU VOLUNTARY HEALTH INSURANCE

KHDI began the experiment of voluntary health insurance in Okgu Gun in September 1979 as a mechanism for financing health services. By June 1980, the number of enrollees had reached 10,983. (See Table C-4.) Since Okgu Gun residents had previous experience with Blue Cross and Seagrave Insurance plans, it is not possible to determine if the total number of new enrollees represents citizens who are experiencing their first health insurance program.

Table C-4. Okgu Voluntary Health Insurance Monthly Enrollment Status (1980)

Enrollees[1]	Jan.	Feb.	Mar.	Apr.	May	Jun.
Existing	7,183	7,614	8,072	9,294	10,015	10,628
Newly enrolled						
Daeya Myon	87	80	212	133	91	101
Other Myon	344	378	1,010	588	522	339
Dropout	0	0	0	0	0	85
Accumulated No.	7,614	8,072	9,294	10,015	10,628	10,983

[1]/Includes the enrollees from Gunsan and other myons in Okgu Gun before and after the program.

Source: Sung Woo Lee, "Cost and Financing Patterns of PHC at the Community Level: Republic of Korea," paper prepared for the WHO/UNICEF Workshop on Cost and Financing of PHC, Geneva, December 1-5, 1980.

The premium role for subscribers was ₩400 per person. Potential subscribers to this program were divided into two groups: poor and nonpoor. The subsidized group paid ₩200/per person by KHDI. The nonpoor paid the total premium. The data

in Table C-5 clearly show that the enrolled rate for the subsidized group was more than double (120 percent) that of the nonsubdized group. Actual revenues collected for the nonsubsidized group totaled ₩643,600. However, revenues for the subsidized group totaled ₩738,600.

Table C-5. Comparison of Enrollment Between the Subsidized and Nonsubsidized Groups in Original Target Area (up to end of July 1980)

Group	Target No.	Enrolled No.	Enrolled Rate
Subsidized group	5,401	3,693	68.3%
Nonsubsidized group	5,189	1,609	31.0%
Total	10,590	5,302	50.0%

Source: Sung Woo Lee "Cost and Financing Patterns of PHC at the Community Level: Republic of Korea," paper prepared for the WHO/UNICEF Workshop on Cost and Financing of PHC, Geneva, December 1-5, 1980.

These data suggest that in order to increase the number of enrollees and generate more revenue, it may be wiser to subsidize the premium, indicating an elastic demand for insurance.

Data from Okgu also revealed that utilization of medical services by insurance subscribers more than doubled. Medical visits rose from 8.36 per 100 enrollees to 21.68 from September 1979 to June 1980 (see Figure C-1). After insurance coverage, a changing pattern of consumer choice was evident.As the cost of private physician care became less expensive to the consumer, its use increased, whereas visits to the PHU and CHC decreased. (See Table 2 in text.) Medical expenditures to physicians also increased by 16.3 percent from 34.6 percent to 50.9 percent of the total as indicated in the table below.

Figure C-1. Trend of Monthly Number of Visits to OPD by 100 Enrollees

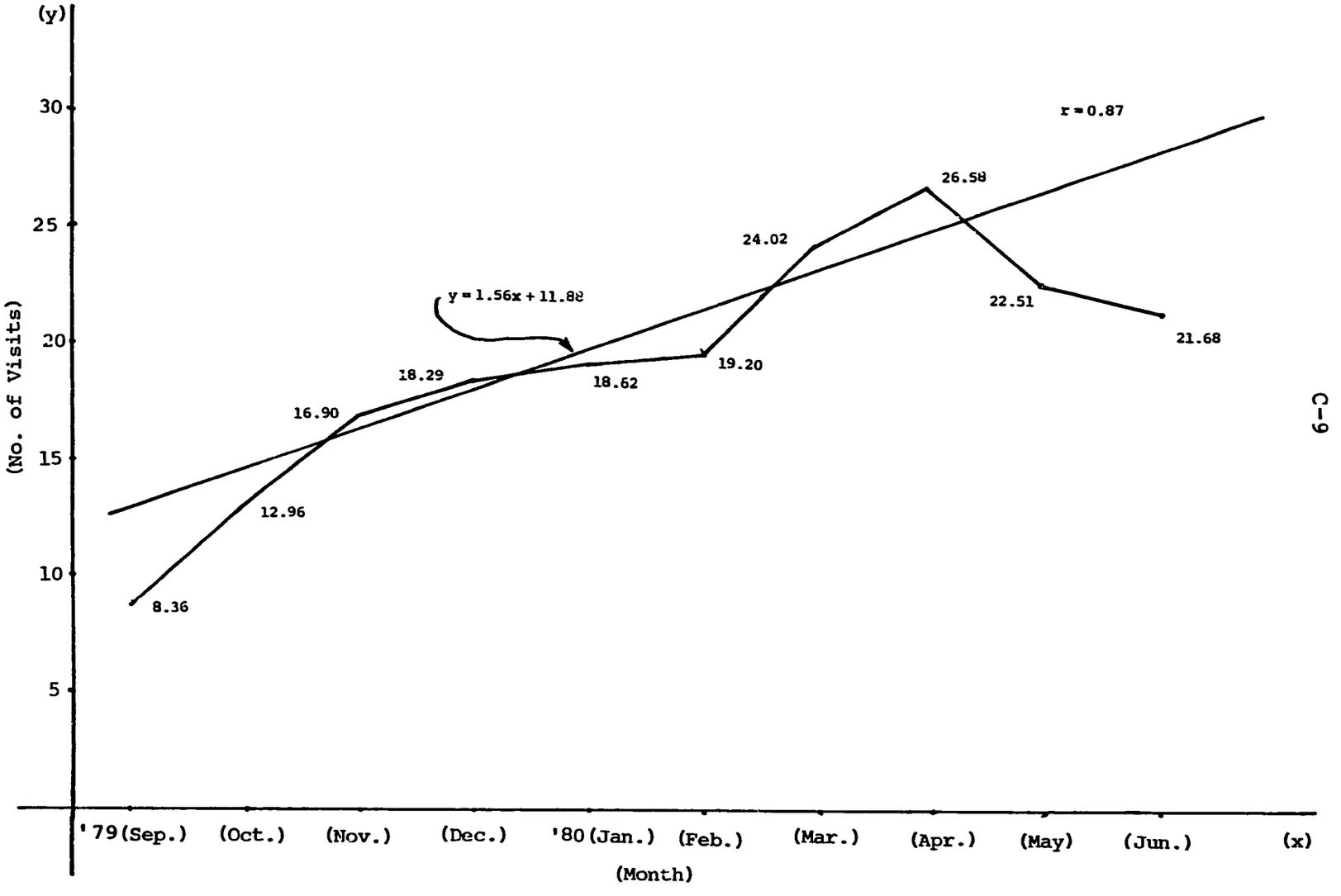


Table C-6. Percentage Distribution of Medical Expenditures by Utilized Medical Facility—Comparison of 1979 and 1980

	Outpatient Services		Hositalization		Total	
Facility	1979	1980	1979	1980	1979	1980
PHU & CHU	34.5	31.5	-	-	19.8	21.0
Clinic (private)	46.3	63.2	18.8	26.1	34.6	50.9
Hospital	19.2	3.8	64.5	10.8	38.5	6.1
General Hospital	-	1.5	17.7	63.1	7.1	22.0
Total	100.0	100.0	100.0	100.0	100.00	100.00
Composition of Total Expenditures	57.2	66.8	42.8	33.2		

Source: Sung Woo Lee, "Cost and Financing Patterns of PHC at the Community Level: Republic of Korea," paper prepared for the WHO/UNICEF Workshop on Cost and Financing of PHC, Geneva, December 1-5, 1980.

APPENDIX D

STATISTICAL TABLES AND FIGURES

Table D-1.1. Health Indicators in Selected Countries, 1973

Country	Crude Birth Rate/ 1,000 People	Crude Death Rate/ 1,000 People	Life Expectancy	Infant Mortality 1,000 Live Births	Population per Hospital Bed	Population per Physician
India	41.1	16.3	49.2	139	1,612	4,805
Indonesia	44.8	18.9	45.4	125	1,724	26,367
Japan	19.2	6.6	73.3	12	96	777
Korea	24.0	7.0	68.1	38	808[1]	2,207
Malaysia	39.0	9.8	59.4	38	380	4,347
Philippines	43.6	10.5	58.4	62	855	9,097
Taiwan	26.7	10.2	61.6	18	2,941	3,224
Thailand	43.7	10.4	58.6	23	847	8,397
United States	16.2	9.4	71.3	19	135	562

[1]/"The World Bank source cited above lists the figure 1,923, which apparently excludes private facilities with less than 50 beds even though they provide inpatient services. If these private clinics are included, the ratio becomes 808 instead of 1,923. We feel it is more relevant to report inpatient beds." Chong Kee Park, "The Organization, Financing and Cost of Health Care," in Chong Kee Park, ed., Human Resources and Social Development in Korea, (Seoul, Korea: Korea Development Institute, 1980), p. 101.

Sources: World Bank, Health: Sector Policy Paper, Washington, D.C., March 1975, pp. 72-75 and pp. 78-79; U.S. Bureau of the Census, Statistical Abstract of the United States: 1976, Washington, D.C., 1976; Ministry of Health and Welfare, Kosei Hakusho (White Paper on Welfare), Tokyo, 1974; and Ministry of Health and Social Affairs, Major Statistics of Health and Social Affairs, Seoul, 1977.

Table D-1.2. Distribution of Diseases at Korean Health Facilities, 1966 and 1973

Disease Category	Percentage of Total Cases[1] 1966	1973
Infectious and Parasitic	9.8	8.5
Neoplasms	1.2	3.2
Endocrine, Nutritional, and Metabolic	2.2	1.5
Mental Disorders	2.6	3.0
Nervous System and Sense Organs	7.6	7.1
Circulatory System	2.0	2.8
Respiratory System	13.7	18.3
Digestive System	27.7	20.5
Genito-Urinary System	6.7	6.9
Complications of Pregnancy, Childbirths, Puerperium	1.3	5.6
Skin and Subcutaneous Tissue	10.2	8.8
Anomalies	0.1	0.3
Perinatal Morbidity and Mortality	0.2	0.2
Symptoms and Ill-defined Conditions	5.2	1.2
Accidents, Poisoning, and Violence	9.2	12.1
	100.0	100.0
N =	69,690	60,453

[1]/The percentage figures may not equal 100 due to rounding.

Sources: Data from "Hospitals, Health Centers, Private Clinics, and Other Modern Medical Facilities," MOHSA, 1973, National Sickness and Injury Survey. Other data from Table III-6, p. 41a, AID, Korea Health Demonstration Project Capital Assistance Paper, AID-DLC/P-2093, (Washington, D.C.: AID, June 2, 1975).

Table D-2.1. Mean Travel Time to Reach All Forms of Care Providers, 1976 and 1979 (in minutes)[1/]

Area/Year	Provider of Care					
	Physician	CHP	Druggist	Herbalist	Other	Total
Hongcheon						
1979	66.9	32.1	29.6	42.7	7.2	35.1
1976	76.7	-	34.3	39.5	17.9	39.0
Change	-7.9	-	-4.7	3.2	-10.9	*
Okgu						
1979	60.8	15.8	36.0	69.2	6.4	40.8
1976	58.5	-	30.2	57.6	4.7	31.2
Change	2.3	-	5.8	11.6	1.7	*
Gunee						
1979	78.0	24.7	42.6	11.5	0.5	46.9
1976	70.7	-	35.2	62.0	14.8	39.8
Change	7.3	-	7.4	-50.5	-13.3	*
Demonstration Total						
1979	66.8	25.5	35.2	69.7	5.1	40.2
1976	61.9	-	33.2	53.3	10.1	36.4
Change	4.9	-	2.0	16.4	-5.0	*
Control						
1979	68.5	-	34.2	83.8	17.5	41.0
1976	63.6	-	49.5	59.1	9.9	46.9
Change	4.9	-	-15.3	24.7	7.6	-5.9

[1/] Table 4,11 in Song and Kim, "A Summary" 1979, p. 24.

* Not calculated.

Sources: Baseline and postevaluation surveys.

Table D-2.2. Mean Expenditures Paid for Curative Care Received During a 15-Day Period, 1976 and 1979 [1] (in won)

Area/Year	Provider of Care				
	Physician [2]	CHP [2]	Druggist [3]	Herbalist [3]	Other [3]
Hongcehon					
1979	2,158	286	414	1,256	50
1976	2,035	-	82	96	38
Change	123	286	332	1,160	12
% Change	6.0	-	404.9	1,208.3	31.6
Okgu					
1979	1,017	812	468	876	277
1976	1,337	-	102	109	125
Change	-320	812	366	767	152
% Change	- 23.9	-	358.8	703.7	121.6
Gunee					
1979	1,372	362	398	835	69
1976	1,375	-	95	132	30
Change	-3	361	303	703	39
% Change	-0.2	-	318.9	532.6	130.0
Total					
1979	1,507	410	462	1,249	93
1976	1,590	-	93	110	71
Change	-83	410	369	1,139	22
% Change	- 5.2	-	396.8	1,035.5	31.0
Control Area					
1979	1,810	-	434	1,140	208
1976	1,388	-	76	121	48
Change	422	-	358	1,019	160
% Change	30.4	-	471.1	842.1	333.3

[1] Adapted from Table 4,16, in Song and Kim, "A Summary," 1980, p. 29.

[2] Expenditures per visit.

[3] Expenditures per treatment day.

Sources: Baseline and postevaluation surveys.

Table D-2.3. Reasons for Not Receiving Physician or CHP Curative Care Among Users of Nonprescribed Medicines During a 15-Day Period, 1976 and 1979 (expressed in % of total responses)

Area/Year	Preference [1]	No Confidence [2]	Economic Reasons [3]		Total
			High Price or Low Income	Time Costs	
Hongcheon					
1979	43.4	7.6	19.9	29.1	100(618)
1976	18.9	23.2	49.2	8.7	100(611)
Change	24.5	-15.6	-29.3	20.4	-
Okgu					
1979	57.3	7.5	14.0	21.2	100(492)
1976	14.3	21.9	56.3	7.5	100(481)
Change	43.0	-14.4	-42.3	13.7	
Gunee					
1979	47.8	12.2	11.7	28.3	100(27)
1976	14.2	30.5	46.2	9.1	100(364)
Change	33.6	-18.3	-34.5	19.2	-
Demonstration Totals					
1979	49.1	8.8	15.7	26.4	100(1,537)
1976	16.3	24.8	50.4	8.5	100(1,456)
Change	32.8	-16.0	-34.7	17.9	-
Control					
1979	50.3	5.1	20.8	23.8	100(308)
1976	14.3	17.7	59.2	8.8	100(288)
Change	36.0	-12.6	-38.4	15.0	-

[1] Recipient believes he or she can get well by use of nonprescribed medicines.

[2] Recovery will be difficult because condition is too severe or did not like to go to physician's or CHP's office.

[3] High costs of physician's fee or no money to go to physician.

Sources: 1976 baseline and 1979 postevaluation surveys. Table 4,3, Song and Kim, "A Summary," 1980, p. 41.

Table D-3.1. Mean Number of Physician and CHP Visits During 1976 and 1979[1/]

	Year/Provider	Control Areas	Demonstration Areas			
			Hongcheon	Okgu	Gunee	Total
a.	1979					
	MD	0.44	1.18	1.42	0.80	1.15
	CHP	-	0.62	0.43	0.70	0.58
	Subtotal	0.44	1.80	1.85	1.50	1.73
b.	1976					
	MD	0.30	0.81	0.82	1.19	0.93
c.	Percentage increase or (decrease) in mean number of visits/person/year	46.7	122.2	125.6	26.1	86.0
d.	Percentage increase or (decrease) in mean number of physician visits/ person/year	46.7	45.7	73.2	(32.7)	23.7
e.	Average number physicians in each location, 1976		13	3	6	
	Average number of physicians in each location, 1979		11	5	3	
	Average number of CHPs in each location, 1979		5	7	5	

[1/]Mean number of visits during a year obtained by multiplying those from a 15-day period by 24.

Sources: 1976 baseline and 1979 postevaluation surveys.
Table 4,8, Kun-Yong Song and Eung-Suk Kim, "A Summary of Final Internal Evaluation on the KHDI Health Project. Evaluating Changes in Access to Health Care," paper presented to Joint ROKG/ AID Final Evaluation Meeting, September 17-20, 1980, Kyongju, Korea, Korea Health Development Institute, Seoul, Korea, 1980, p. 21., (mimeo)

Table D-3.2. Utilization by Type of Service Per Month and Day in Project Counties, 1978 and 1980

Facility		Average Monthly Curative Visits		Daily Curative Contacts		Daily Preventive Contacts		Target Population in 1,000's		Annual Curative Contact Rate Per Person	
	1978	1980	1978	1980	1978	1980	1978	1980	1978	1980	
Health Center											
Gunee	629	550	25	22	40	25	13.7	13.8	0.6	0.5	
Hongcheon	599	477	24	19	72	24	31.3	31.6	0.5	0.4	
Okgu	870	1,203	34	48	59	30	16.3	16.6	0.6	0.9	
Substructure											
Gunee Sobo	375	340	15	14	20	24	4.6	4.5	1.0	0.9	
Goro	350	275	14	11	11	15	2.8	2.7	1.5	1.2	
Suksan[1/]		72	Closed	3	Closed	9	Closed	2.5	2.4	0.3	Closed
Hongcheon Dogoan		547	187	22	8	14	3	5.6	5.5	1.2	0.4
Moolgul	324	162	13	7	6	3	3.1	3.0	1.3	0.7	
Yeukjunpyong		362	144	15	6	7	3	2.7	2.7	1.6	0.6
Okgu Hwehyun		422	213	17	9	18	20	9.3	9.3	0.6	0.3
Seosoo	239	167	10	7	12	5	3.3	3.3	0.9	0.6	
Daegwang		77	189	3	8	2	7	4.0	4.0	0.3	0.6

[1/] Suksan closed in 1979 and reopened July 1, 1981.

Sources: Table 4,3, p. 52, Ha Cheong Yeon, Primary Health Care in Korea: An Approach to Evaluation, (Seoul, Korea: Korea Development Institute, 1980) and 1980 data provided by KHDI and county health staff. The 12 sample facilities from the three counties were picked to conform to those used in the external evaluation conducted by Dr. Ha Cheong Yeon of KDI. See Ha Cheong Yeon, Primary Health Care in Korea: An Approach to Evaluation, (Seoul, Korea: Korea Development Institute, 1980).

Table D-3.3. Utilization by Type of Service Per Month, Korea Health Demonstration Project Counties, 1978 and 1980

Facility	Type of Service									
	Curative Visit		Preventive 1/							
			MCH		FP		Other		Total	
	1978	1980	1978	1980	1978	1980	1978	1980	1978	1980
Health Center										
Hongcheon	599	477	758	186	267	250	767	90	2,391	1,072
Gunee	629	282	659	516	120	79	210	19	1,618	1,164
Okgu	780	1,203	1,089	-	156	29	151	715	2,264	1,947
Substructure										
Gunee Sobo	375	340	375	542	70	37	67	26	886	945
Goro	350	275	215	288	28	50	36	26	630	639
Suksan	72	NA	169	NA	13	NA	38	NA	293	NA
Hongcheon Dogoan	547	187	219	21	84	44	44	8	895	259
Moolgul	324	162	68	25	44	47	36	10	471	243
Yeukjunpyong	362	144	109	17	12	34	43	13	526	208
Okgu Hwehyun	422	213	332	-	80	14	32	482	865	709
Seosoo	239	167	134	-	70	4	88	116	529	287
Daegwang	77	189	17	-	-	8	35	177	129	374

1/ Inconsistent categories of data aggregation by gun and difference in the "other" category definition make it impossible to provide consistent data for each preventive category of service provision. In Okgu Gun for example, it is presumed that there are a large number of other preventive visits and MCH visits.

Table D-4.1 1978 and 1980 Comparative Data For Selected Rural Health Facilities in Gunee, Hongcheon, and Okgu Guns, Korea: Total and Average Cost, Preventive and Curative Contacts.

Place	1978 Total Cost (1,000) current Won)[1]	1978 Number of Visits/ Contacts Curative[2]	1978 Number of Visits/ Contacts Preventive[3]	1978 % of Total Costs Curative	1978 % of Total Costs Preventive	1978 Average Cost per Curative Contact	1980 Average Cost per Curative Contact	1980 Total Cost (1,000) current Won)	1980 Number of Visits/ Contacts Curative	1980 Number of Visits/ Contacts Preventive	1980 % Total Costs Curative	1980 % Total Costs Preventive	1980 Average Cost per Curative Contact	1980 Average Cost per Preventive Contact	1980 Average Cost For All Contacts	1978 Average Cost for Curative Contact Revised	Average Cost for Preventive Contact Revised	Average Cost For All Contacts
Health Center																		
Gunee	38,135	7,548	11,868	8.9	20.9	450	672	45,572	5,890	7,373	29.9	70.1	2,313	5,424	3,436	1,511	2,252	1,964
Hongcheon	175,467	7,188	21,504	17.9	41.2	4,370	3,362	96,776	5,721	6,427	30.3	69.7	5,126	10,495	7,966	7,397	5,687	6,116
Okgu	63,032	9,360	17,808	20.4	31.3	1,374	1,108	178,144	14,430	8,929	39.5	60.5	4,876	12,070	7,626	2,660	2,141	2,320
						1,825	1,676	320,492	26,041	22,729	32.5	67.5	4,000	9,518	6,571	3,731	3,848	3,675
Substructure																		
Gunee																		
Sobo	9,109	4,500	6,132	30.5	32.6	617	484	9,707	2,839	7,248	11.3	51.7	1,651	691	961	978	768	857
Goro	4,951	4,200	3,360	35.2	31.9	415	470	8,260	3,237	437	52.5	47.5	1,340	898	1,086	619	700	655
Sokson	2,616	864	2,652	24.2	30.3	733	299	Closed	Closed	Closed	44.4	55.6				1,344	548	744
Hongcheon																		
Dagoon	6,134	6,564	4,176	30.2	30.2	282	444	7,062	2,238	872	50.0	50.0	1,578	4,049	2,270	467	734	571
Moolgul	4,951	3,888	1,764	35.9	25.5	457	716	6,622	1,945	976	58.5	41.5	1,992	2,816	2,267	745	1,165	876
Yeukjunpyong	4,395	43,44	1968	33.5	26.1	339	583	6,442	1,730	767	56.2	43.8	2,093	3,644	2,580	569	978	696
Okgu																		
Hwahyun	22,591	5,064	5,316	34.0	27.4	1,517	1,164	8,537	2,562	5,948	55.4	44.6	1,846	640	1,003	2,471	1,895	2,176
Seosoo	5,310	2,868	3,480	31.4	37.7	581	575	5,475	2,002	1,443	45.4	54.6	1,242	2,072	1,589	840	833	836
Daegwang	4,374	924	624	34.0	21.7	1,609	1,521	5,405	2,265	2,216	61.0	39.0	1,456	951	1,206	2,888	2,734	2,826

[1] Table 6,3, p. 86, Ha Cheong Yeon, Primary Health Care in Korea, An Approach to Evaluation, (Seoul, Korea: Korea Development Institute, 1980).

[2] Table 4,2, p. 50 and 51, Ha Cheong Yeon, Primary Health Care, Ibid; 1980.

[3] Okgu figures are actual expenditures provided by Okgu gun health director for 1980. The other two gun figures are estimated on the basis of (a) computing the personnel and salary figures for each type of personnel in each facility and then taking the mean of three estimates of other costs, e.g., supplies, drugs, electricity, water, taxes, transport, and maintenance. The estimates are based on (a) Okgu percentages for each type of other expenditures for type of facility, (b) 1978 average estimates derived from Yeon's book, Table 5, , p. 86 for type of expenditure and facility, and (c) the 1978 proportion of total county expenditure represented by that facility.

Table D-4.2. KHDI Financial Disbursements for Project Operating Cost, 1978 and 1980

Area	1978		1980	
	Total Operating Costs 1/ 2/ (1,000 Won)	Percentage KHDI of Total Operating Disbursements	Total Operating Costs 2/ 3/ (1,000 Won)	Percentage KHDI of Total Operating Disbursements
Gunee				
Central Government	59,265		20,966	
Local Government			57,864	
KHDI	75,702	56	93,277	54
Subtotal	134,967		172,107	
Hongcheon				
Central Government	100,420		100,303	
Local Government			687	
KHDI	68,839	41	87,882	46
Subtotal	169,259		188,872	
Okgu				
Central Government	44,998		275,675	
Local Government				
KHDI	67,602	60	67,282	19
Subtotal	112,602		342,957	
Total	416,827	51	703,936	35

1/ Table 8,4, Ha Cheong Yeon, Primary Health Care in Korea, op. cit., 1980, p. 118.

2/ Total includes only disbursements for operating costs.

3/ From 1980 financial statements prepared by gun officials.

Table D-4.3. Primary Health Unit Total Operating Costs as a Percentage of Estimated Total Medical Expenditures Per Household in Demonstration Areas of Korea, 1979 and 1980

Area	1979	1980 1/
Gunee	5.0	3.9
Hongcheon	2.8	2.3
Okgu	2.9	3.9
Total	2.6	3.2

1/ To derive 1980 figures, a 25 percent increase in household expenditures is utilized to conform to the inflation in medical care prices between 1979 and 1980.

Sources: Dr. Yeon Study 1980, Table 8,4, p. 110.
Song and Kim, Internal Evaluation 1980. Table 4, 18, p. 32.
1980 data collected from the three county health directors.

Table D-5.1. Disposable Income Elasticities of Demand for Urban and Farm Households in Korea, 1973 1/

Item	Urban Households	Farm Households
Food	0.33	0.41
Housing	1.49	1.71
Light and Fuel	0.79	0.60
Clothing	1.61	0.81
Other	1.41	0.59
Medical Expenditures 2/	1.00	

1/ Table 3, Sang Mok Suh, "The Patterns of Poverty," in Chong Kee Park, ed., Human Resources and Social Development in Korea, Essays on the Korean Economy, Vol. 4, (Seoul, Korea: Korea Development Institute, 1980), p. 343.

2/ Estimated from data in Appendix table 5, Chong Kee Park, "The Organization, Financing, and Cost of Health Care," in Chong Kee Park, ed., Human Resources, ibid., 1980, p. 160.

Table D-5.2. MOHSA Plan to Finance Primary Health Care System in Rural Areas and for Poor Urban Populations in Korea, 1982 Budget

Item	Amount in Billion Won		
	Central Government	Provincial and County	Total
Salaries			
Health Center Staff	2.877	2.877	5.754
Public Health Doctors	1.800	1.800	2.600
CHPs	1.500	1.500	3.000
CHAs	10.500	10.500	21.000
Total Salaries	16.677	16.677	33.354
Other Health Subcenter Running Cost	0.277	0.277	0.554
Equipment for Health Sub-centers	0.780	0.780	1.560
Health Facilities	1.759	-	1.759
Subtotal	2.816	1.057	3.873
Medical Program	39.000	11.000	50.000
Total Government Expenditure	58.493	28.734	87.227

Source: Government of Korea, Central Government Budget Estimates: Fiscal Year 1982, (Seoul, Korea: Govt. Printer, 1981).

Table D-5.3. Average Gun Health Budget Versus Demonstration Areas, 1978
(in current won)

Demonstration Area	Health Expenditure Per Capita(I) 1/	Health Expenditure Per Capita(II) 2/	Health Revenue Per Capita	Local Tax Per Capita
	1,063	2,255	101	5,220
Gunee	1,199	2,588	151	4,877
Hongcheon	1,011	2,243	136	2,333
Okgu	980	1,935	16	8,451
Other Guns	989	898	36	4,061

1/ General budget in gun.

2/ Included KDHI contribution.

Sources: Bureau of Local Financial Administration, Ministry of Home Affairs, Financial Abstract of Local Government, 1970; Primary Health Care in Korea, An Approach to Evaluation, Ha Cheung Yeon, Korea Development Institute, 1981, p. 123.

APPENDIX E

HEALTH STATUS IN KOREA

I. HEALTH STATUS IMPACT

While it was stipulated that the project's purpose was to have a direct health status impact, efforts were made by the Korean Health Development Institute (KHDI) to assess the health status changes which occurred as a result of this project. As was pointed out in the early sections of the main body of the text and presented in Tables D-1.1 and D-1.2, general indicators of health status were fairly high according to world and Asian standards. Other indicators of health status as presented in Table E-1 show considerable improvements since the early 1960s. For example, daily per capita calorie intake has increased from less than 2,000 calories in the early 1960s to nearly 2,700 calories by 1977. Other indicators such as protein intake, incidence of typhoid fever, and the prevalence of tuberculosis show similar improvements.

With respect to specific indicators of health status in the demonstration areas, little specific change is discernible. However, limited evidence from Okga Gun suggests that some improvements occurred between 1976 and 1979 in such indexes as the total fertility rate (TFR), incidence of acute morbidity, and average per capita sick days reported per month. (See Table E-2.)

A. Preventive Health Service Provision

KHDI provided several preventive health services including two important ones--immunization and family planning. The data presented in Tables E-3 and E-4 first show that in 1976, more people in the three demonstration areas had received vaccinations than those in the control area. Second, the DPT vaccination rate increased significantly only in Hongcheon, whereas it dropped in Gunee. In general, the changes in the rates of those who completed three doses or more appear exactly the same in both the demonstration and control areas. (See Table E-3.)

The vaccination rates of BCG and measles indicate general improvement in both Hongcheon and Okgu, whereas BCG vaccinations dropped slightly in Gunee and the control area; on the other hand, measles increased in both areas. The negative changes in DPT and BCG vaccination rates in Gunee might be attributed to the fact that these two vaccinations had already achieved a high coverage level prior to the program (88.3 percent for DPT and 78.0 percent for BCG).

Table E-1. Selective Indexes of Health, 1962-1980

Year	Average Nutrient Intake/Adult/Day	Average Protein Intake/Adult/Day	Typhoid Fever Morbidity Rate per (%)	Tuberculosis Prevalence Rate (%)
1962	1.943(cal)	53.2(g)	10.2 100,000	
1963	1.918	53.1	18.7	-
1964	2.041	54.6	15.5	-
1965	2.189	57.7	13.1	5.1
1966	2.079	56.4	11.8	4.9
1967	2.216	60.4	14.3	4.7
1968	2.276	62.1	12.9	4.5
1969	2.309	63.5	18.5	4.3
1970	2.704	73.4	14.5	4.2
1971	2.588	75.9	10.0	4.0
1972	2.300	70.3	6.2	3.8
1973	2.507	70.7	2.6	3.6
1974	2.567	75.6	2.0	3.4
1975	2.429	69.0	1.5	3.3
1976	2.407	67.9	1.9	3.1
1977	2.668	83.6	0.8	3.0
1978	-	-	1.2	2.8
1979	-	-	0.6	2.6
1980	-	-	0.5	2.5

Source: Economic Planning Board, Government of Korea, 1981.

Table E-2. Health Status in Demonstration and Control Areas

Variable	Okgu 1976	Okgu 1979	Gunee 1976	Hongcheon 1976	Control 1976
CBR	19.5	18.0[1]	18.0	23	20.8
TFR	3.4	3.0	3.5	4.1	3.6
Morbidity (acute)	110.9	100	87.6	147.3	96.0
Morbidity (chronic)	100.3	90[1]	123.4	161.3	152.7
Healthiness [2]	78.8	89[1]	78.9	68.8	76.0
Per capita sick days/month	2.5	2.0	2.6	3.7	2.9

[1] Data are hypothetical.

[2] Healthiness = $\frac{\text{No. of healthy people} \times 100}{\text{Sample population}}$

Source: Background Papers on Health Demonstration Project, KHDI, 1978, p. 285.

Table E-3. Proportion of Target Population Receiving DPT Vaccines, 1976 to 1979[1/]

Number	Demonstration Areas				Control
Received/Year	Hongcheon	Okgu	Gunee	Total	Area
At least one dose:					
1979	71.0	66.7	76.9	70.7	38.6
1976	43.4	60.0	88.3	60.2	40.0
Change	27.6	6.7	-11.4	10.5	-1.4
Three or more doses:					
1979	33.3	25.7	38.4	31.6	12.3
1976	18.2	19.0	41.7	23.9	4.6
Change	15.1	6.7	-3.3	7.7	7.7

Table E-4. Proportion of Target Population Receiving BCG and Measles Vaccine 1976 to 1979[1/]

Number	Demonstration Areas				Control
Received/Year	Hongcheon	Okgu	Gunee	Total	Area
BDG					
1979	39.1	42.4	74.4	48.3	21.1
1976	34.3	32.0	78.0	43.6	26.2
Change					
Measles					
1979	44.9	40.9	53.8	45.4	14.0
1976	22.2	23.0	33.3	25.1	6.2
Change	22.7	17.9	20.5	20.3	7.8

[1/]The percentages are based on children aged one year only (12-23) months old at the time of survey.

Source: 1976 baseline and 1979 postevaluation surveys.

The rate of family planning service use increased over the 1976 to 1979 period in both the demonstration and control areas, from approximately 40 percent to 55 percent. (See Table E-5.) Thus, by 1979, these rural areas had achieved a comparable family planning service adoption rate in comparison with the nation as a whole. The largest increases occurred in the use of sterilization, "other" methods, and the loop, with the pill and condom dropping in use.

Table E-5. Changes in the Usage Rates of Family Planning Methods, 1976 and 1979

Area/Date	Oral Pills	Loop	Condom	Sterilization	Other	No Use	Total(N)	Adoption Rate
1. Hongcheon								
1979	8.8	8.8	5.6	14.4	15.1	47.3	100(568)	52.7
1976	9.5	7.3	7.3	5.4	8.5	62.0	100(614)	38.0
Change in %	-0.7	1.5	-1.7	9.0	6.6	-14.7	- -	
2. Okgu								
1979	6.8	14.5	3.2	23.3	11.3	40.9	100(468)	59.1
1976	5.5	10.7	3.9	9.9	10.7	59.3	100(513)	40.7
Change in %	1.3	3.8	-0.7	13.4	0.6	-18.4	- -	
3. Gunee								
1979	6.9	14.1	1.4	16.8	10.8	50.0	100(418)	50.0
1976	10.0	13.1	3.2	2.8	6.2	64.4	100(471)	35.6
Change in %	-3.1	1.0	-1.8	14.0	4.6	-14.4	- -	
4. Demonstration totals (1+2+3)								
1979	7.6	12.1	3.7	18.0	12.7	45.9	100(1454)	54.1
1976	8.3	10.2	5.0	6.1	8.5	61.9	100(1598)	38.1
Change in %	-0.7	1.9	-1.3	11.9	4.2	-16.0	- -	
5. Control								
1979	8.2	17.7	2.9	10.0	16.9	44.3	100(379)	55.7
1976	9.0	14.2	3.0	2.8	12.2	58.8	100(401)	41.2
Change in %	-0.8	3.5	-0.1	7.2	4.7	-14.5	- -	

N = Number sample = currently married women aged 44 or under.

Source: 1976 baseline and 1979 postevaluation survey.

Table E-6. Responses to Questions and Factors Changing Health Status According to Type of Person Interviewed

Type	Improved Health Status	Hygiene	Better Nutrition	Economic Growth	Improved Access to Medical Care	Improved Educational Level	Total Interviewed
Gov't Officials	Yes	6	4	3	2	6	7
Physicians	Yes	16	16	13	10	10	16
CHP	Yes	6	5	3	5	6	8
CHA	Yes	1	2	2	1	1	3
VHW	Yes	2	2	1	1	1	3
Herbalists	Yes	2	4	2	-	1	4
Pharmacists	Yes	4	2	4	-	2	4
Midwives	Yes	2	2	1	-	-	2
Insurance Officials	Yes	2	2	3	3	-	3
Villagers	Yes	34	40	43	23	28	46
Field Health Workers	Yes	2	2	2	2	-	2
Total		77 (78.6%)	79 (80.6%)	77 (78.6%)	47 (48.0%)	55 (56.1%)	98

B. Perception of Health Status Change

During the course of the evaluation, 98 people were asked several questions including how they perceived their current health status in comparison with 5 years before. The respondents varied from county chiefs to villagers in remote areas. All of them gave positive responses to this question. (See Table E-6.) When classifying their response with respect to perceived factors most attributed to this improvement, "better nutrition" was most frequently mentioned as one of the most important reasons for the improvement. This factor was given by 79 persons or 80.6 percent of the respondents, which was followed in frequency by "improved hygiene" 78.6 percent and "economic growth" 78 percent.

Improved access to medical care was the least frequently mentioned factor (48 percent). It is particularly noteworthy that this factor was the least frequently given by local government officials, physicians, and villagers, but most frequently given by CHPs and health insurance officials.

APPENDIX F

INCENTIVE STRUCTURE IN HEALTH CARE SYSTEM AND THE ROLE OF POLICY

I. POLICY EFFECTS ON INCENTIVES

Implementation of a primary health care program requires development of a set of new policies and budget allocations by governments. Individuals who are already "actors" in health-sector programs will react to a greater or lesser extent to these changes, depending on how these changes curtail activities in which the individuals have an interest. Often, projects are not successfully implemented because thought is not given to how the new program will affect existing providers. Thus, if a policy is to succeed, a majority of the actors must perceive that it is in their self-interest to participate in and support the implementation process.

In primary health care programs, one important policy change is the expansion of paraprofessional categories of health workers and the development of rural-based facilities from which such personnel work. For example, it was found that the implementation of a primary health care project in rural areas of Korea was systematically undermined by the preexisting providers who viewed the cadre of workers as unwanted competition in their market areas. As a consequence of resistance to the new primary health care system, the program was not able to obtain a significant share of the market, such that it could realize economies of scale and thereby become an economically viable program.

The set of policies implemented in the case of Korea are delineated in Table F-1. One can see from the table that there were a number of alternative providers in rural areas which were differentially affected by the policies which were implemented in inactive rural primary health care programs. There were also many different policies implemented by the Korean government during the life of these primary health care activities. For example, a new paraprofessional cadre were developed along with a rapid expansion in the physician pool. Thus, there were considerable pressures to change the aggregate set of patient choices from consuming services at the primary health care facilities to consuming from pharmacists and physicians. The physicians were able to restrict the medical practice of the village health workers by questioning the "quality of care" that the paraprofessionals delivered. This restriction on medical practice expanded the market share for physicians and other providers.

During this same period, the Korean Government expanded rural health insurance to cover physician's services. This policy had a considerable effect on the consumer's choice of whom to go to for care. Before the implementation of the insurance policy, the average cost to a consumer at a primary health care unit was about ₩2,000 to ₩3,000, exclusive of

Table F-1. An Analysis of Incentives: Reactions of Participants to PHC Implementation Policies, 1976-1981

"Actors"/ Participants	Policies: Expand VHW Cadre	Expand CHP Cadre	Alternative Service for Physicians in Rural Areas	Increase Supply of Physicians	Restrict Medical Practice of CHPs	Expand Rural Health Insurance Coverage to Physicans
1. Consumers	0	+	+	+	+	+
2. Providers					—	
Private Physicians	-	-	+	+/-	+	+
Pharmacists	0	-	0	+/-	+	-
Traditional Healers	-	-	-	-	0	0
Midwives	+	0	-	-	0	0
CHPs	+	+	-	-	-	-
UHWs	+	+	-	-	-	0
3. Health Facilities						
Hospitals	0	0	0	+	+	+
Health Centers	+	+	0	+	0	0
Health Posts	+	+	0	0	-	-
4. Organizations						
Ministry of Health	0	0	+	+	+	+
Gun Level of Health Department	+	+	+	+	0	+
KHDI	+	+	-	0	-	+
Professional Association of Physicians	-	-	+	+	+	+
5. Health Insurance Organization	NA	NA	NA	NA	0/+	+

Source: David W. Dunlop, et al., Korea Health Demonstration Project, Impact Evaluation, (Washington, D.C.: AID, 1981).

o: means no strong impact either way
+: means that participant is positively affected by policy and reacts favorably to policy
-: means that participant is negatively affected by policy and reacts negatively to policy
+/-: means variable effect and is explained in text
NA: not available

drugs. As a consequence of introducing the insurance, the utilization of the physicians' services rose and the cost to the government in reimbursements increased, as one would expect. Altogether, consumers' and providers' reactions to the policies implemented by the Korean Government caused the low-cost primary health care program to, in fact, be a high-cost proposition.

Thus, it is important to engage in incentive analysis, i.e., to delineate the expected affects of new policies on the providers and consumers in an existing health care services market. By virtue of engaging in such analyses, one can ascertain the political strategies necessary for successful implementation of a health project. Furthermore, one can better determine what the costs of the program will be. This analysis is a necessary step in increasing the likelihood of success in implementing a true low-cost primary health care system.

APPENDIX G

PUBLIC DOCUMENTS RE HEALTH CARE DELIVERY AND HEALTH INSURANCE

Excerpts from the "Law on Special Measures for Health Service in Rural Areas" passed January 1981
Translated from Korean by Kil-Byong Yoon
(Former KHDI Researcher)

Excerpts from the "Law on Special Measures for Health Services in Rural Areas"

Article 15. On qualification of CHP
They (CHPs) should be holders of nurse or midwife licenses and should finish more than 24 weeks training to be conducted by the Ministry of Health and Social Affairs.

Article 17. On CHPs curative activities and their limitation
CHP can conduct light or minor curative services, as determined by relevant regulations later, for the areas covered by her PHU irrespective of medical law Article 25.

Excerpts from enactment regulation of the "Law on Special Measures for Health Services in Rural Areas."

Article 15. On duty of CHP
CHP should perform the activities under the guidance of Health Center Director (usually M.D.), as indicated hereunder:

1. Educate people on health care
2. Collect health statistics and information
3. Improve nutrition of people
4. Address problems of environmental sanitation
5. Preventive measures for communicable disease
6. Family planning and MCH activities
7. Mental hygiene
8. Supervise village health agent
9. Minor or lighter curative services or activities as stipulated in main art 19.

Article 19. On the Scope and Limitation of CHPs Curative Services
The scope and limitation of curative activities can be as illustrated hereunder:

1. Checking or examination of illness or sickness to determine one's illness (or unhealthy status)
2. Referral of patients
3. Treatment of such light or minor symptoms as the common cold or some emergency treatment if needed for an emergency patient
4. Take necessary action with cases in order to prevent worsening the sick or ill symptoms
5. Measures for convalescence on follow-up for chronical (sic) cases
6. Attend normal deliveries and insertion of contraceptives for Family Planning
7. Vaccination and inoculation
8. Supply medication as prescribed by medical doctors

Chosun Daily Newspaper
July 30, 1981

(New Prescription and Pharmaceutical Dispensing System launched from September)

Hongcheon, Okgu, Gunee demonstration areas for class II Insurance as a starting area.

A new system of doctors giving prescriptions and medicine being provided by a designated pharmacist is introduced in Korea for the first time. The system is designed to specialize the roles of doctors and pharmacists. It will be applied in the three demonstration areas beginning on September 1, 1981. The designated demonstration areas by the Ministry of Health and Social Affairs (MOHSA) as of July 29 are Hongcheon in Kangwon Province, Okgu in Chungbuk Province, and Gunee in Kyungbuk Province where the MOHSA is demonstrating the Class II insurance scheme. MOHSA has instructed the designated medical service instituting and drug stores to complete the necessary facilities by the end of August.

The MOHSA decided these three areas should be used to test the new system for the following reasons: (a) the new system will operate in the same areas in which the class II health insurance scheme has been developed; (b) the number of medical service providers in those areas are not enough to take all the patients with the insurance cards; and (c) pharmacies are losing their business. The present pharmaceutical affairs law allows the doctors the right to prescribe and this new system developed by the MOHSA will allow doctors to prescribe for those who need emergency medical care in those three areas.

The designated medical providers for this new system are 20 medical clinics and 13 drug stores from a total of 24 drug stores in those three areas. The 13 drug stores were considered to be able to be equipped fully to take the new system by the end of August, 1981. The other drug stores will be included as soon as they are ready with necessary facilities for medicine and space.

To expel medical case abuses pharmacies must expand to stock more than three thousand medicines. A further implication of this change is that doctors will likely raise their fee to compensate for their lost business.

The main reason most of the developed countries regulate the practice of the pharmaceutical distribution is to reduce the over-abuse of medicine. It has been discussed for some time in Korea to promote the people's health. But with the new system, patients have to pay a service charge for both the doctors'

prescription and diagnosis, and pharmacists filling prescriptions. There have been reasons why the system has not been changed. These include the possible rise of doctors' fees and the small scale of most pharmacies. To fill a doctor's prescription, a pharmacy has to be equipped with at least three thousand kinds of medicine in a large enough space. Most of the advocates for the change came from pharmacies in the cities which were big enough to meet the requirements. However, medical care providers opposed the change. The income of Korean medical care providers depends heavily on drug sales. Thus, patients in Korea spend more than 40 percent of the total cost of care on medicines, whereas patients in the developed countries spend 8-20 percent on medicine. This percentage difference may be an indicator of over-use or abuse of medicine in Korea. This additional expenditure only maximizes doctors' income. Hopefully this new system will help to reduce the over use of medicine by doctors.

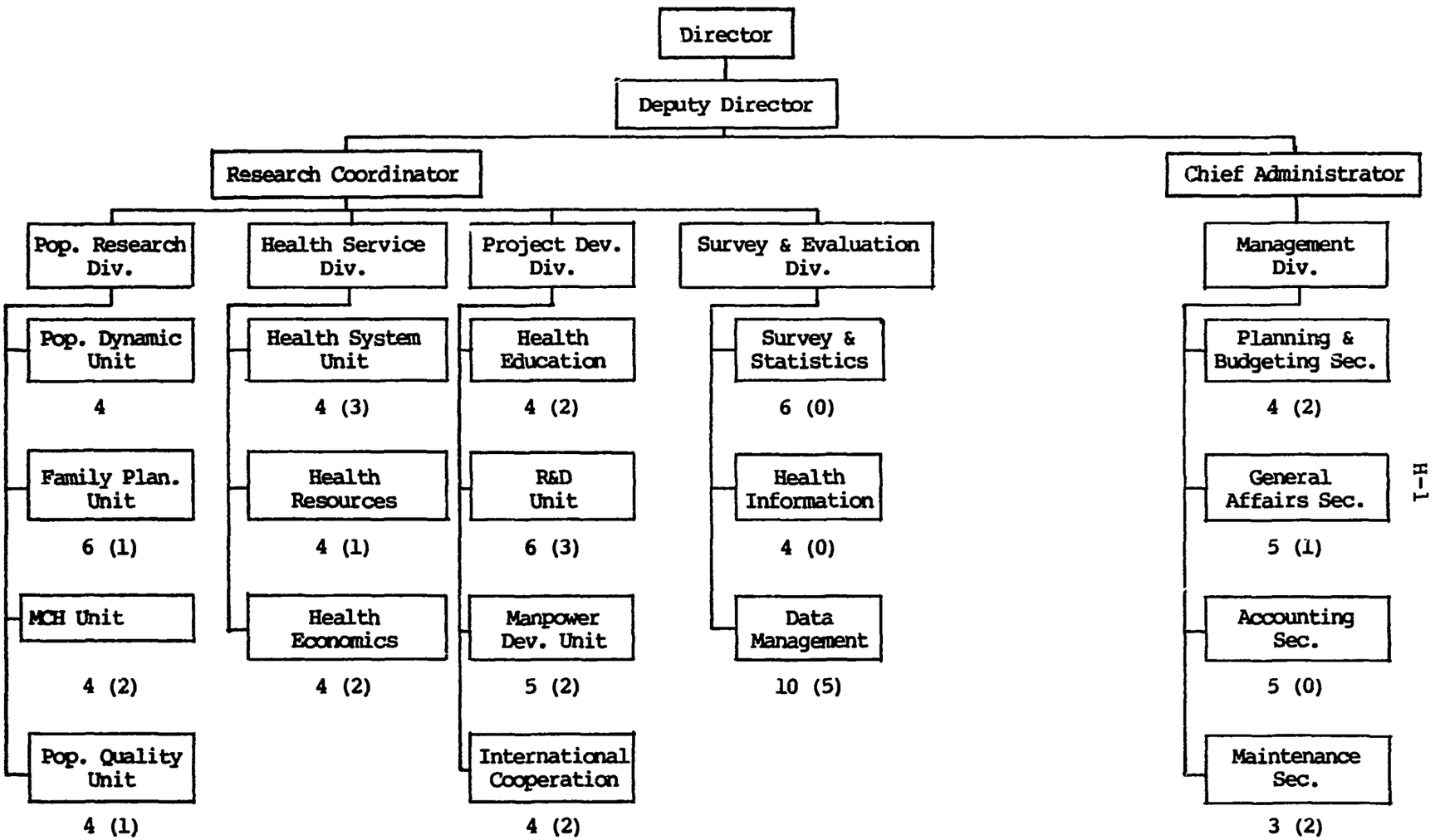
The belated application of this new system occurred to solve problems resulting from the practice of class II insurance. Prior to the system change people in those three areas would not buy drugs at the drug stores since their insurance premium payment covered drugs acquired from physicians. Thus, this system is introduced to save the drug stores from a business crisis.

Trial and error is inevitably forseen. For example, how will the new system address the problem of the emergency case where doctors will not be able to provide medicine without going to a pharmacist. Undoubtedly, practical solutions will emerge.

APPENDIX H

ORGANIZATION CHART FOR THE KOREA INSTITUTE FOR POPULATION AND HEALTH AUGUST 1981

Figure H-1. Organization Chart for the Korea Institute for Population and Health, August 1981



* The figures in parentheses are ones from former KHDI.

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APPENDIX J

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Kim Bong Young is currently working as Secretary General for the World Association of Women Journalists and Writers and does field research in social and cultural anthropology. She started her research work at the Population Studies Center in Seoul National University (SNU) in 1963 after graduation from SNU with B.A. degree in Sociology. She has translated two books into Korean: Blackberry Winter by Margaret Mead and Reminscences by Anna Dostoyevsky. She has also been working as a Research Assistant to the Korean National Folklore Survey conducted by the Korean Society for Cultural Anthropology, the Population and Development Studies Center of Seoul National University, the MISEREO Foundation, and

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